NATUR CYMRU

A Review of WILDLIFE in Wales

Rhif/Number 10 • Gwanwyn/Spring 2004

- How 'natural' is woodland nature?
- Bumblebees – some unseasonal behaviour
- Holding on to nature
- Lesser horseshoe bats get lucky
- What wildlife means to coalfield communities
- Taking a closer look at micros
- Gardens – sanctuaries for wildlife
- Llên y llysiau: rhedyn
- Moving in – the fen raft spider
- Sheep dip – a threat to aquatic life
- Hysbysfwrdd/NoticeBoard

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Golygyddol

Am ddeng mlynedd, fe wyliais ddôl wleb, wyllt ger ffordd Caergybi yn datblygu'n bentwr o irisau melyn a llysiau'r angel. Yna, fe gafodd y ffordd newydd ar draws Ynys Môn ei hadeiladu, a bu'n rhaid i'r ddôl ildio i gynnydd. Gosodwyd pibell, adeiladwyd draen goncrid, daethpwyd ag uwchbridd ar y safle, ac fe dorrwyd y llystyfiant. Bellach, mae darn bychan – ond bendigedig – o wlyptir, a oedd gynt yn gartref i lygod pengrwn y dŵr, yn borfa ddi-liw sy'n cael ei phori gan geffylau.

Llun: CCGC.

Fe wyliais y cyfan yn digwydd o flaen fy llygaid, ond wnes i ddim byd. Mae hi lawer yn rhy hawdd dweud dim wrth i'n cynefin hardd gael ei drawsnewid yn rhywbeth unffurf a salw. Ond mae pob cornel aflêr, pob llain sy'n ddisglair gan hud byd natur, yn werth ymladd drosti. Mae erthygl Anne Bryan, sy'n sôn am sut y cafodd gwerddon fechan o dir gwyrdd ei hachub, yn arwydd y dylai pob un ohonom ymarfogi, fel petai. Er mwyn gwneud gwahaniaeth, rhaid i ni weithio'n galed a bod yn gwbl ymroddedig; ond fe all y broses newid amgyffrediad pobl, gan ddod â phawb yn nes at ei gilydd.

Fe all byd natur ddod â hwyl, dihangfa a rhyfeddodau lu i'ch rhan. Mae modd i lawer ohonom ddarganfod hyn yn ein gerddi, ynghyd â'r microwyfynod di-rif. Mewn dwy erthygl, ceir gwybodaeth ynglŷn â sut y gallwch ddenu mwy o fywyd gwyllt i'ch gerddi, a sut y gallwch ddod o hyd i'r microwyfynod sy'n byw ynddynt.

Nid pobl sydd wedi creu natur, ond ers tro byd rydym wedi dylanwadu ar y tirlun. Ys dywed Jim Latham, roedd bodau dynol i'w cael cyn fforestydd, felly ni allwn ystyried coetiroedd yn naturiol ond drwy dderbyn ein bod ni wedi bod yn rhan o natur ers cyn cof. Mewn mannau fel cymoedd meysydd glo De Cymru, lle mae hanes pobl a byd natur wedi plethu trwy'i gilydd ers canrifoedd, fe fyddai cryfhau'r berthynas rhyngom ni a'r amgylchedd o gryn fudd i ni. Disgrifia Julian Branscombe atyniadau bywyd gwyllt rhyfeddol yr ardal hon, yn ogystal â'r hyn sydd ar gael i bobl leol.

Ni allaf feddwl am greadur mwy carismatig na'r ystlum pedol lleiaf, nac ychwaith am greadur di-asgwrn-cefn mwy trawiadol na chorryn rafftio'r gors galch, ac fe sonnir am y ddau yn y rhifyn yma. Wrth gwrs, mae amgylchedd dŵr iach yn bwysig i'r ddau. Mae Bob Merriman yn disgrifio'r ymdrech sydd ar y gweill i atal pobl rhag cael gwared â chemegau dipio defaid mewn ffyrdd cwbl amhriodol.

Mae byd natur yn llawn rhyfeddodau, ond mae olyniaeth gyson y tymhorau yn rhywbeth y gallwch ddibynnu'n llwyr arno. Ond a yw hyn yn gwbl wir? Cefais fy rhyfeddu gan erthygl Alan Morley sy'n sôn am gacwn yn nythu yn ystod y gaeaf, fel y cafodd yntau ei synnu o weld mamwenyn yn casglu paill ym mis Rhagfyr. Mae'r gwirionedd annisgwyl yma yn ein hatgoffa y gallwn bob amser ddysgu llawer mwy am fyd natur, pe bai gennym yr amynedd i eistedd yn ôl a'i wylio. Mae hefyd yn arwydd o'r hyn sy'n digwydd i'r tymhorau. Pe bai hyn yn parhau i ddigwydd, nid cacwn yn unig fydd yn drysu'n lân.

James Robertson

Editorial

For ten years I watched as a wet, unmanaged meadow beside the Holyhead road became an exuberant mass of yellow flags and wild angelica. Then the new road across Anglesey was built, and the meadow was conscripted to serve the cause of progress. A pipe was laid, a concrete drain constructed, top soil brought in and the vegetation cut. A small but glorious piece of wetland which once provided a home for water voles is now a dull, horse-grazed pasture.

I watched it happen but did nothing. It is all too easy to stay silent, as our surroundings are converted to a drab uniformity. But every untidy corner, every bright little patch of nature, is worth fighting for. Anne Bryan's account of how one small oasis of green was saved is a call to arms. Making a difference takes hard work and commitment; but in the process it can change perceptions and bring people together.

There is fun, and escape, and endless surprise to be had from an involvement with the physical reality of nature. Many of us find this in our gardens, along with untold numbers of micro-moths. Two articles provide information on how to make your garden more wildlife-friendly, and how to find the micro-moths living there.

People have not created nature, but we have influenced the landscape for a very long time. As Jim Latham points out, humans were here before the forests, so we can only really regard woodlands as natural if we accept that, for most of our history, we have been part of nature. In places like the south Wales coalfield valleys, where human and natural history have long been entwined, there is much to be gained from strengthening the links between ourselves and our environment; Julian Branscombe describes the remarkable wildlife attractions of this area, and what it offers local people.

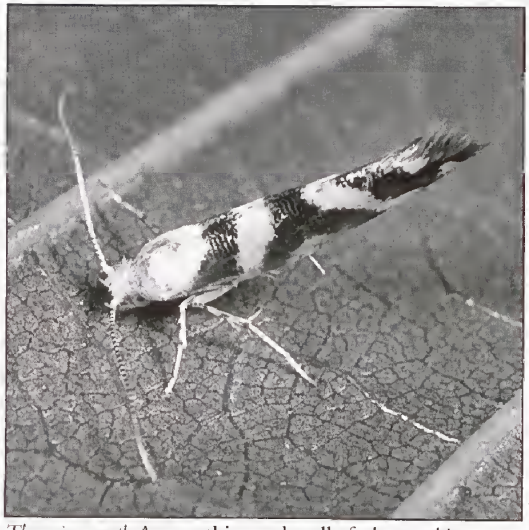


Photo: Michael Hammett.

The micro moth Argyresthia goedartella *feeds on catkins.*

I can't think of a more charismatic creature than the lesser horseshoe bat, or a more impressive invertebrate than the fen raft spider, both of which feature here. A healthy water environment is important for both of them; Bob Merriman describes efforts being made to prevent the improper disposal of sheep dip chemicals which threaten aquatic life.

Nature is a source of constant surprise, but the steady rhythm of the seasons is a dependable certainty. Or is it? I was as fascinated to read his article about winter nesting bumblebees as Alan Morley was to witness queen bumbles collecting pollen in December. This nice piece of observation reminds us that there is always more to learn about the natural world, if we have the patience to sit and watch. It also strikes a sinister note about what is happening to the seasons. Any more of this, and it won't just be bumblebees that are confused.

James Robertson

How 'natural' *is* woodland nature?

It is commonly assumed that our broad-leaved woods are modified remnants of a once pristine forest, which covered the land before humans arrived in these islands. Their conservation value is measured by the degree of subsequent human influence and modification they have experienced; naturalness is the Holy Grail of management. As ***Jim Latham*** *points out, this view is wrong: people were here before the forests returned after the last Ice Age, and have influenced them from the start. Here he argues that human and natural history are bedfellows; a better understanding of the part humans play in the natural scheme of things should serve to strengthen the reasons for conserving our woodland heritage.*

Woodlands are inextricably linked with the passage of time. It's almost impossible to stand in a wood and discuss its condition and management without speculating on how it used to be. How has it come to have the structure it has today? How natural is it?

We have altered our forests in many ways. Whereas in prehistory forest covered most of the land surface, today only about 4% of Wales' land surface is covered by semi-natural woodland. Forest has changed its status from being the matrix within which other habitats sat, to that of wooded islands in a non-forest matrix. This degree of fragmentation has profound effects on natural forest processes and biodiversity.

We have altered the tree structure, form and composition of woods through millennia of coppicing, timber extraction or simply casual fire-wood removal. Indeed, if woods were not used and valued even fewer would have survived. The dominance of oak in Welsh woods owes much to the historic favouring and nurturing of this species over others. Large mammals are important drivers of some woodland processes[1], but we have replaced complex assemblages of deer, boar, aurochsen, beavers and their attendant predators, with sheep and occasional cattle.

We have also added many species, which change woodland ecology to varying degrees. For example sycamore, though not the threat to our native habitats once thought, is now irrevocably part of our woodlands; rhododendron is a more potent menace, destroying woodland ground flora where it is well established. We are also affecting woodland through the profound impacts of pollution, eutrophication, and climate change.

If we can list the ways in which we have altered forests, perhaps we can paint a picture of a non-altered, natural forest, before the advent of humans. How far can we do that? When did human influence become strong enough for our woods to become only *semi*-natural? To explore this question we need to go far back in time.

'Archaic *Homo sapiens*' were present in Britain from at least 500,000 years ago, and there is evidence that even at this remote time they were carefully selecting small trees or branches for spears and other tools. Modern humans appeared in Europe about 40,000 years ago, and there is evidence for their presence in Britain 38,000 years ago. These people brought with them enormous technological developments. They made buttoned clothing, specialised tools, painted and made sculptures, and used diverse natural resources such as antler, bone and shell. Compared to the cultural stability of the past few hundred thousand years, things changed rapidly. These people almost certainly used wood, but we have no direct evidence from these times. We know that humans have been present in Wales almost continuously since then, leaving only during the most extreme glacial periods.

The most extraordinary record from the Upper Palaeolithic is from Paviland on the south coast of Gower. Evidence of intermittent use or occupation of caves between 29,000 to 21,000 years ago includes the famous burial of the 'Red Lady' (actually a man). Discoveries here include mysterious bone 'spatulas', very similar in form to some from contemporary Russia, hinting at the wide social connections and mobility of these people. But the truly remarkable thing is that at times during the occupation period the glacial ice sheet lay only a few kilometres to the north. The people were clearly capable of living in harsh glacial conditions, presumably hunting game virtually along the edges of the ice.

The last intense period of the Ice Age peaked at about 18,000 years ago. It is usually assumed that humans abandoned Wales and Britain at this time, but intermittent presence of these adaptable and mobile people seems likely. People must have been quick to re-colonise Wales following the retreat of the ice and there is firm evidence of occupation from around 14,000 years ago. This was a tundral world of herbs, grasses, sedges, dwarf shrubs, and no trees. The important point is that people were here *before* the trees and the return of the forests. It's a popular perception that people arrived in Britain to find a dense 'wildwood' stretching across the country: this perception is very wrong.

The people of this period were hunter-gatherers, nomadic and living in small bands. But this doesn't mean that they didn't influence their environment, and there's growing evidence of their activities. For example, a line of huge pine posts 60-80 centimetres in diameter, set in pits in the ground, has been discovered from what is now a car park at Stonehenge. These posts date from 10,000 years ago (more than twice as old as the famous stone circle). Their function is unknown, but the important point is that people were already capable of felling and manipulating large trees during the period that forest was re-establishing itself in Britain. Excavations at Star Carr in Yorkshire have unearthed a 10,000 year old settlement or seasonal hunting camp at a lake shore. Here people had made substantial wooden platforms and hollowed out tree trunks for boats. From Denmark (across the low land that would one day become the North Sea) come all manner of wooden artefacts from this period, including complex wicker fish traps.

Early post-glacial people also altered the environment through their impacts on animal populations. They certainly contributed to the extinction of the mega-fauna – mammoths, giant deer, woolly rhinos – although to what extent is unclear. These large animals may have prevented the establishment of extensive closed-canopy forest, so the intriguing possibility exists that, through hunting, humans actually assisted the development of forests. Fires may have been lit deliberately at this time to keep areas open, in order to stimulate fresh growth and to draw in animals to be hunted. Perhaps some favoured places – headlands, sacred areas and look-outs – have never been allowed to become wooded.

Agriculture arose in the near east, spread westwards across Europe and was adopted in Wales 5-6,000 years ago. This new Neolithic lifestyle and land use required forest clearance, and deforestation and fragmentation have continued until modern times.

However, the transition may have been quite leisurely, with Mesolithic populations on the western fringe of Europe gradually becoming more sedentary and adopting agriculture as and when it suited them[2]. By the time of the Roman invasion, the broad landscape pattern in Britain was comparable to the present day, with discrete managed forest-blocks set within a pastoral and agricultural matrix in the lowlands,

and perhaps more extensive forest tracts in the uplands. True wilderness areas would have been restricted to the remotest regions even at that date.

Some striking evidence for woodland management from the Neolithic period comes in the form of wooden trackways, preserved in the boggy ground which they were built to cross. The most famous example is the Sweet Track from Somerset (5,000 years old), and similar (though later) ones come from the Gwent levels. In some cases even-aged poles were used, hinting that organised coppicing was established at this time, an idea reinforced by imprints of woven hurdles within the remains of dwellings. By the Bronze Age (c. 3,000 years ago) there was a woodworking technology based on a detailed understanding of the properties of different types and ages of wood: extensive wooden structures, hurdles, wheels, axles and ladders have been recovered. It seems that many traditional forms of woodland management have not changed fundamentally for thousands of years. Management history is deeply entangled with the kind of woodlands which we value, and many species or combinations of species rely on specific management treatments. We have no woodland we can really call natural.

Reconstruction of the Sweet Track. Photo: Andy Burnham.

We have seen that there is evidence of human impact on forests from the very earliest times, and that forests since the Ice Age have developed under human influence from the start. Where, in this long history, can we draw a line to say: 'Beyond this point the actions of humans were no longer natural'? Really, this is an impossible question: there was no Golden Age, no time when people were simply bystanders to nature.

I think we must accept that people have been part of natural systems since they first evolved. In nature conservation we must embrace the impacts of people, treating them in a balanced way and aiming to preserve examples of long-established woodlands, regardless of the degree of human influence.

When we adopt a minimum-intervention approach to management, we remove human impacts as far as possible and allow natural processes to shape the development of the wood. In doing so we see exquisite and complex structures and microhabitats developing which are very hard to replicate through active management. These include the complexity of deadwood habitats, the tangled chaos of landslips, and the pools that form in the hollows left by the root plates of wind-thrown trees. We are allowing natural woodland to develop, but always in the context of what has gone before and what surrounds it. We are always a factor in it, even when we decide not to do anything. Woodlands can be natural, but on their own terms, and not as re-creations of something from the distant past.

Jim Latham is Woodland Ecologist with the Countryside Council for Wales.

If you are interested in learning more about the Sweet Track, please visit www.megalithic.co.uk

References

1 Latham, J. (2002) 'Forest Feeders – the role of big animals in woodland'. *Natur Cymru* No 3 pp 15-17

2 Pryor, F. (2003) *Britain BC – Life in Britain and Ireland before the Romans*. Harper Collins, London.

Y gwir am y coed

Camgymeriad yw ceisio ail-greu coedwigoedd yn ôl rhyw syniad o'r hyn oedd yn arfer bod. Mewn gwirionedd, roedd dyn yng ngwledydd Prydain cyn i'r coed ailfeddiannu'r tir ar ôl y rhew ac roedd dyn yn defnyddio coed filoedd o flynyddoedd yn ôl. Rydyn ni wedi newid ffurf a phatrwm coed trwy docio a thorri neu gasglu coed tân; ni sydd wedi ffafrio coed derw yng Nghymru ac mae disodli ceirw, baeddod a'u tebyg gyda gwartheg a defaid wedi cael effaith hefyd. Rydyn ni wedi ychwanegu rhywogaethau – mae masarn yn rhan hanfodol o'n coedwigoedd, tra bod rhododendron yn fygythiad – heb sôn am achosi llygredd, ewtroffedd a newid hinsawdd. Erbyn cyfnod y Rhufeiniaid, roedd amrywiaeth y tir yn debyg i'r patrwm heddiw. Doedd dim Oes Aur pan nad oedd dyn yn ymyrryd. Hyd yn oed trwy wneud dim, rydyn ni'n cael dylanwad. Gall coedwigoedd fod yn naturiol, ar eu telerau eu hunain.

Bumblebees – *some unseasonal behaviour*

Bombus terrestris.
Photo: Mike Edwards.

Ever full of surprises, the natural world can offer the attentive observer remarkable discoveries at any season. ***Alan Morley****'s observations of queen bumblebees collecting pollen in winter demonstrate the point.*

On a warm(ish) day in early December at about 8.15am I noticed several honey bees (*Apis mellifera*) foraging on a large *Mahonia* bush in our garden. The bush was in full flower and had perhaps 80 or 100 flower heads and at least 50 honey bees gathering nectar. It was hardly light, so I was surprised and fascinated by all this activity. The weather was very calm, no wind, the temperature about 12°C, and the sky cloudy. I watched the bees for quite some time, then suddenly a buff-tailed bumblebee (*Bombus terrestris*) queen arrived and started collecting as much pollen as she could. I was now quite absorbed by the bee activity in this one flowering bush in the garden.

By mid-morning the activity had more or less stopped, and I went round all the other gardens in the neighbourhood looking for flowering shrubs, in particular *Mahonia*: no luck, our bush seemed to be the only one flowering in the area. Next morning I was back on watch; the weather and activity were more or less the same as the previous day, but I had a slight feeling that we had in fact two bumblebee queens, although I only saw one at a time.

This feeding pattern continued for several days as the weather was calm, settled and not cold, but on 7 December the air was noticeably colder and no hive bees came to feed. After a very hard frost during the night (half an inch of ice on the garden pond) the following day was very cold and sunny. By 10am a queen arrived, followed shortly by the second queen, confirming my suspicions of two queens being active and both collecting pollen. All this was unique in my experience: to have a queen bumblebee collecting pollen in December can only mean that she had a nest of young to care for. In this case there must have been two nests, which was almost impossible to believe. That was not the end of the day's surprises, as shortly afterwards two worker bumblebees appeared and began collecting nectar.

How to help bumblebees

In the wild, bumblebees often take over abandoned mouse or vole nests. An ideal nest should be dark, warm and sheltered. An old teapot is ideal, the spout acting as an entrance tunnel. An upturned flowerpot, a cavity beneath a flat stone, or small wooden boxes will also serve. Spring flowers attractive to bumblebees include white dead-nettle, yellow archangel, early-flowering willows and sallows. In the summer, cottage garden plants are popular: borage, delphinium, honeysuckle, lavender, lupin, raspberry, salvias and thyme.

All this was taking place with the temperature at zero! It was interesting to note that only the two queens were collecting pollen. This general activity continued for several days, the queens only appearing early in the day and only gathering pollen. Another interesting observation was that on days warm enough for the honey bees to come and feed, they adopted the habit of hitting the bumblebees in the middle of the back to drive them off, a technique which worked quite well!

Sometimes I wondered if I was studying the bumblebees, the hive bees, the bush or the weather. Bumblebees can fly in the cold, early morning air, so they could get to the food supply before the honey bees. Competition was great, as the Oregon Grape is the only food source in the area. Even on calm, warm days, there was almost no activity after 3pm, but as the supply of food became more and more scarce, the bumblebees fed later and later, while the honey bees gave up their interest long before the bush finished flowering.

The last bumblebee queens were seen foraging on 22 December, and by that date the number of workers present at any one time had risen to about 15. Even in very strong winds and quite heavy rain the bumblebees were active, indicating that the colonies must be quite large and the demand for food high.

On 28 December disaster struck our two struggling bumblebee colonies. That night we had a very hard frost that lasted night and day for two days, and after the frost left, there were no bees seen for three days.
I feared the worst. I was sure both colonies had been wiped out. But surprise, surprise, on the third day one lone worker arrived. Had she been able to survive because she was still cocooned and only emerged after the frost? Two days later a second worker appeared, and so slowly the numbers built up again.

By 7 January eight bees were present and, as an added bonus, I realised that both colonies had survived the cold spell. No hive bees appeared after this date, and the bumblebees were feeding later and later in the day, even at dusk. The bush was by now well past its prime and the bees were having to search harder and longer for their nectar and pollen. By 21 January the last of the flowers were finishing and there were more bees than flowers on the bush. A very severe gale arrived and totally wiped out the last of the flowers; no bumblebees were seen after that date.

From my observations, the queens probably started their nests in late November, because by 2 December they were collecting pollen and nectar; by 8 December the first workers appeared; and by 20 December worker bees had taken over all foraging activities. The frosty period obviously killed off most of the bees in both nests, but enough survived to carry on until their food supply finished, after which the two colonies presumably died out.

Could these bumblebees have survived the whole winter if enough food had been available for them?
Is this observation unique in Britain, has it been recorded occasionally before or it does it happen regularly? Is it all part of global warming? Bumblebees can evidently survive even quite hard frosts here on the west coast of Wales.
I have not seen or heard of this occurring anywhere in Britain before, but I have heard of bumblebees attempting to breed in New Zealand over the winter period.

Alan H. Morley is an international bee advisor who has kept honeybees for many years.

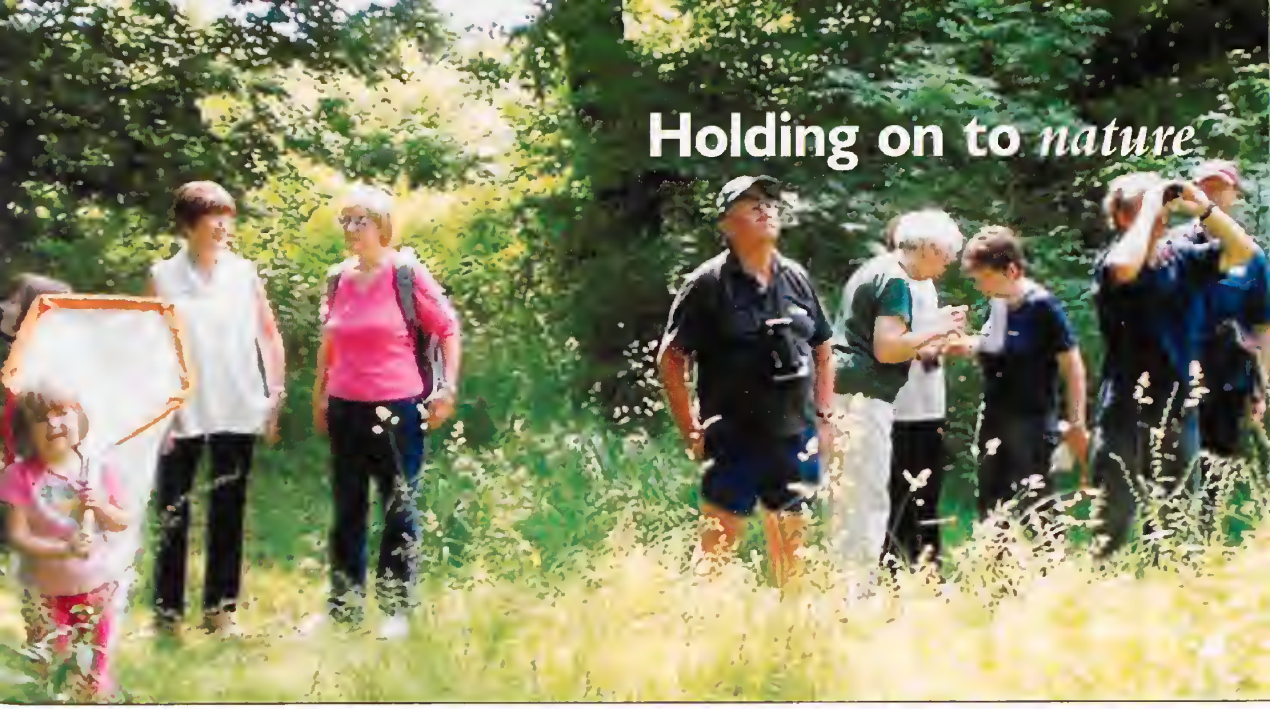
Photo: Alan H. Morley.

Bees visiting the winter-flowering Mahonia.

Gwenyn rhyfeddol?

Mae'r arbenigwr gwenyn, Alan Morley, eisiau gwybod pa mor anarferol yw ymddygiad gwenyn bwm yn ei ardd yn ystod mis Rhagfyr. O'u gwylio ar lwyn Oregon, roedd yn casglu bod dwy frenhines wedi dechrau nythu yn niwedd mis Tachwedd gan ddechrau casglu paill a neithdar ar Ragfyr 2. Erbyn Rhagfyr 8, roedd gweithwyr yno hefyd a nhw oedd yn gwneud yr holl hela erbyn Rhagfyr 20. Ddiwedd y mis, lladdwyd y rhan fwya' gan rew ond roedd rhai wedi goroesi nes i'w bwyd ddod i ben. Fel arall, meddai Alan Morley, a fydden nhw wedi gallu byw trwy'r gaea'.

Holding on to *nature*



Cwmtalwg: the walk for biodiversity week last June. All photos: Anne Bryan.

Little by little, the tidying up of nature in our towns and suburbs has robbed people of opportunities to experience the wonder of the non-human world. It is easy to feel powerless and watch as the bulldozers move in, but when a community pulls together and makes a stand, anything is possible; and the rewards are literally beyond price, as ***Anne Bryan*** *reports.*

In 1987 the Council planned to remove an old hedge near my home in Barry. Holding on to this hedge has brought many people closer to the nature of our place.

It all began in the hairdressers, where I read about the plans to fill in a hollow, demolish an overgrown hedge and culvert a small stream. Nothing special in those days, but this hedge was behind our house. It refreshed me to walk along this little remnant of 'the wild and the wet' that remained in the middle of the expanding housing developments. I went straight to the Council Offices to look at the plans.

The Council officers explained how excellent their scheme was: it would put to good use some subsoil left over from making a new bowling green, it would get rid of the untidy hollow and the overgrown meandering hedge and boggy ditch, and they'd plant a line of standard trees by the road and be able to mow the grass tidily. The more they explained, the more convinced I was that this 'improvement' would be vandalism. I phoned the Glamorgan Wildlife Trust for advice.

Small copper butterfly.

Help from the Wildlife Trust

The Trust's officer encouraged me to object, and to speak to other residents and local Councillors. I soon found other people who felt as I did, including a Councillor who lived opposite the hedge, he played me a tape of a wonderful dawn chorus that he'd heard from his bedroom window. Our hedge was marked on an estate map of 1779, and included twelve species of trees and shrubs. The Wildlife Trust's officer explained that the older a hedge was the more species it included and this hedge was likely to

Goldilocks buttercups carpet the woodland floor.

have been a mediaeval field boundary. We also showed him two small woods nearby which contained a similar mix of trees and shrubs; oak, ash and field maple, with a rich understorey including holly, hazel, hawthorn, blackthorn, crab apple, spindle, dog rose, wayfaring tree and guelder rose. The ground flora included primroses, violets, wood sanicle and a profusion of the uncommon goldilocks buttercups, which are indicators of ancient woods.

Holding our ground

Even if the hedge was ancient, I did wonder if it was worth fighting for such a small thing. I'd certainly miss it if it was bulldozed away, as I'd miss my neighbour if she was run over by a truck. I'd surely try to save her even though her death would have a tiny effect on population statistics. Why shouldn't we try and save this place? Did we need to? There's a country park a couple of miles away, Council officers suggested this was enough green space, there was no need to keep our bit of waste ground. But we liked having somewhere near enough for an impromptu walk. Why couldn't we have nature close to home, particularly for young children and old people without cars? We also felt it was worth challenging the Council's perception that a line of trees and flat mown grass was a satisfactory replacement for a wildlife rich area, even if our challenge was only perceived as an irritating flea bite.

Inspiration from Northampton

The Wildlife Trust officer gave us a leaflet from the Royal Society for Nature Conservation (RSNC) about the Pocket Park scheme pioneered by Northampton Council. This suggested that local people, supported by conservation organisations and the Council, could care for overgrown and vandalised copses, ponds etc. on the edges of towns and villages. Problem sites could be transformed into places which would benefit local people and wildlife. This idea positively inspired us.

The Group takes shape

It was very hard to battle with the Council, but it was invigorating to meet other like-minded people and be part of this group activity. It was very satisfying when we discovered a technical irregularity in the way the plan had been drawn up and the Council had to withdraw it. We had by this time formalised ourselves into a Group with a committee, constitution etc., and the Group proposed to the Council that we should manage the woods and hedge with the support of the British Trust for Conservation Volunteers (BTCV Cymru), the Prince of Wales Committee (now the Princes Trust), and the Wildlife Trust.

Public pressure pays off

The idea of partnership between the community, conservation organisations and Local Authorities is now familiar, but this was 1988 and Agenda 21 wasn't formulated until 1992. The Council had seen us initially as a nuisance and it wasn't easy for them to believe that we could be useful. They couldn't ignore us, though, because our campaign had received a lot of publicity in local newspapers. After a few months the Council gave way to our persistent public pressure and allowed us to manage a small area of the woods for a trial period of five years.

Planting partnership

In spite of past differences the Council gave us £500 to plant a hedge at the edge of the wood, to deter people from dumping rubbish. Early in 1989 the Mayor started the planting, which was later completed by scouts, guides, army cadets and local people. Later the agreement between the Council and the Group was extended to cover the old hedge and the woods, just under 3 hectares in all, and it is now for a 25 year term. Money is raised from various sources, and teams from BTCV (Cymru) and other volunteers have helped Group members to improve the site, which is now a Local Nature Reserve. A web site www.cwmtalwgwoods.co.uk gives details on how the project works, what's going on and what organisations are involved.

Surveying the wildlife

The Wildlife Trust did a survey at the beginning of the project and found 122 different plant species. The Group chairman, an expert bird watcher, has noted 45 species of birds. As more houses have been built around the woods, some species have been lost; the cuckoo used to be heard each spring, but is no longer. But the site has also been enriched: a barren area of swampy mud, cleared of rubbish and overhanging trees, has became a pond alive with frogs in the breeding season.

Involving people

In our town any unused land is likely to be developed, so from the first we've encouraged people to use and enjoy the site. Regular newsletters give notice of nature walks, work parties, talks, a teddy bears' picnic and a senior picnic in a glade accessed by a path especially built with the disabled in mind. The Group is involved with several schools which bring children here for environmental studies or to help with tree planting and other activities.

Many people naturally value it as a place where they can put their worries aside and admire the brilliant delicacy of leaves opening in spring, or relax in the welcome summer shade or walk among the frosted fallen leaves. Though the place feels tranquil, it is also intensely dynamic, alive with insects and birds, which are another source of pleasure.

Pains and pleasures

Things often go wrong, of course. It's a constant challenge to balance the needs of wildlife and people, and to engage with people of all sorts. This summer someone set fire to a stolen motorbike, contractors and householders often dump rubbish, litter is a constant problem and some dog walkers perversely put their dog mess in plastic bags and then fling them into the bushes, where they hang like gruesome decorations. Children throw sticks and stones at the mating frogs and have even thrown frogspawn at passing cars (apparently it sticks like glue). On the other hand, people are the strength of the project: there are wonderful teenagers who have worked hard with us; delightful young children who write lovely thank you letters, saying how great it was to see a leopard slug or a millipede; there are helpful dog walkers who pick up litter; residents who tell us how much they love the woods and who act as eyes and ears and forestall trouble; and the local firm that recently made the Group a new notice board for a token price.

A picture for the new noticeboard by Charlotte Davies, Bryn Hafren Comprehensive School.

Changes

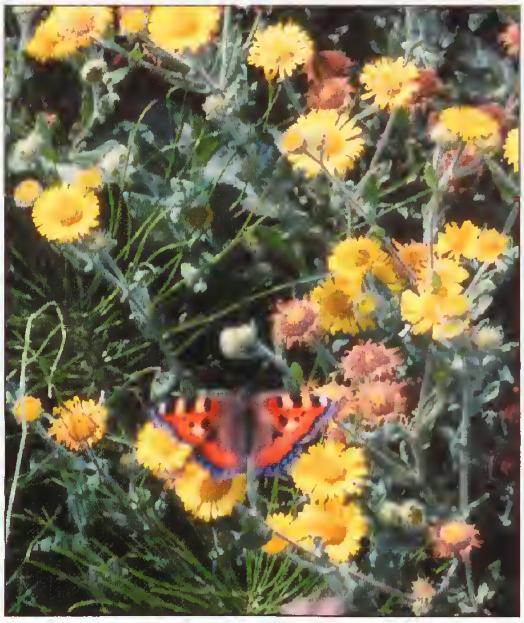
Many things have changed for the better. There's now a welcome emphasis on biodiversity, and much more support for urban nature conservation, but some changes make life more difficult. Paperwork is more oppressive than in the past. Groups are now expected to have formal equal opportunities policies, risk assessment policies and, if they work with children, child protection policies. All very worthy, and sometimes necessary, but so much regulation damps down spontaneity and causes anxiety. Grants are also more complex to apply for, and the right buzz words must be used, the correct hoops jumped through.

Tranquility away from the rat race.

Value for money

I feel uneasy, too, with an increasing tendency to try and quantify nature conservation in terms of money from tourism and so on. The value that we put on our place, that made us fight to keep it, and work hard to look after it, can't be expressed in monetary terms. It's the value of having, near our homes, the opportunity to be uplifted by the speckled wood butterflies chasing each other in their territorial disputes, the value to a child of the chance to be touched by a millipede's hundreds of legs, the value of being able to open the window on the dawn chorus. The natural world is vital to us in ways that we are only just beginning to understand, and to feel a close connection with the richness of this world is priceless.

Anne Bryan has lived in Barry for forty years, where she was a GP until she retired. She has had a fascination with nature since childhood, and has an appreciation of the life-enhancing and health-giving benefits which contact with nature brings.



Tortoiseshell butterfly on fleabane.

Parc poced yn amhrisiadwy

Yn 1987 y dechreuodd Anne Bryan ymladd i arbed gwrych ger ei chartref a rhwystro'r cyngor lleol rhag troi'r tir gwyllt gerllaw yn llecyn taclus, digymeriad. Gyda chymorth yr Ymddiriedolaeth Natur leol a'i chymdogion, llwyddodd y cyn-feddyg i greu 'parc poced' yno a chael yr hawl i Grŵp lleol ofalu am y gwrych ac, yn ddiweddarach, am 3 hectar o goedwig.

Gyda thystiolaeth fod y gwrych yn nodi ffin ganoloesol ac i'w weld ar fap yn 1779, mae Anne Bryan yn dadlau fod y weithred o'i warchod wedi dwyn pobl yn nes at natur. Ar ddechrau'r prosiect nodwyd fod 122 o blanhigion gwahanol ar y safle ac mae cadeirydd y Grŵp wedi cofnodi 45 rhywogaeth o adar.

Er fod rhai pethau'n cael eu colli wrth i ragor o dai gael eu codi yn y cyffiniau, mae pethau eraill wedi dod, gan gynnwys pwll sy'n llawn brogaod. Er bod rhai problemau sbwriel a fandaliaeth, mae Anne Bryan yn mynnu mai pobl leol yw cryfder y gwaith. "Rwy'n teimlo'n anghyfforddus," meddai, "gyda'r duedd gynyddol i geisio mesur cadwraeth yn nhermau arian twristiaeth ... does dim posib mesur mewn arian y gwerth a rown ni ar ein lle."

Lesser horseshoe bats *get lucky*

All photos: Vincent Wildlife Trust.

Lesser horseshoe bats are a good barometer for the state of Welsh countryside, as they need pristine environments as well as a scattering of country houses to roost in. They are a particularly Welsh species, thriving as well here as anywhere in the world. Amongst our dozen or so species of bat, they have generated the most concern, partly because of the exacting conditions they need and partly because of the fascination they exert. Fortunately, help is at hand, as ***Henry Schofield*** *and* ***John Messenger*** *report.*

It's mid-summer and dusk falls on a traditional stone and slate cottage in the Montgomeryshire hills. The cottage looks cared for. The roof is sound and the walls look strong, the exposed woodwork is painted or stained and a strong stock proof fence surrounds young hedgerow plants and a small pond. But no light is thrown from the windows as they have been bricked in. No smoke emerges from the chimneystacks as they are capped off. From an opening above a stable door in the old animal stalls attached to the cottage, the first signs of the residents' activity can be seen. Bats are flying around in the gloomy interior. They are lesser horseshoe bats, one of our most endangered species, and the building is one of twelve bat reserves owned or leased by The Vincent Wildlife Trust in Wales.

Roost restoration

The roost was discovered in the late 1980s, a sad shell of a building, with the windows smashed and holes blown in the roof. The tin sheeting on the animal stalls was rusted and rotten, wind-blown at strange angles. Pushing the warped front door open revealed a debris-strewn room with an old range covered in disintegrated plaster from the walls and rotten ceiling boards bowed by years of rain pouring through the open roof. Virginia creeper, planted years before by long-gone human residents, hung down through the gaps in the roof and touched the floor. The only shelter from the weather and daylight was a stairwell leading to the upper floor. The steps were covered with bat droppings and, in an alcove above, clustered tightly together were sixty lesser horseshoe bats. Drastic measures would be needed if the colony, and the building, were to be saved.

In 1990 The Vincent Wildlife Trust acquired the cottage (the first of its Welsh bat reserves) and the process that followed has been repeated at many of our subsequent acquisitions: walls re-pointed, roofs re-slated, all rotten timber removed or replaced. The windows are blanked off to create a dark interior and doors secured against unwanted visitors. The roof is lined with plastic mesh for the bats to hang from and a variety of roosting areas are created to allow the bats to select the best temperature regime for their energy requirements at different times of the year. Lesser horseshoe bats cannot crawl, so openings need to be created that are large enough for them to fly through but which can prevent unwelcome human access.

The cottage before modification.

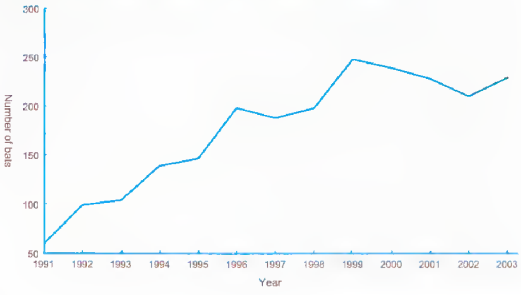
Once this ideal bat roosting habitat is produced, the colony is left in peace. The reserve is visited regularly to check its security but during the breeding season no one goes inside. From discrete locations, and avoiding any disturbance, the colony is counted out twice during the summer, in the month before the females give birth, to monitor the colony's size. Thirteen years on, the results have been phenomenal. From the sixty bats huddled in the stairwell, 230 lesser horseshoes now occupy the building. They still use the stairwell, but the piles of droppings on the floor show that the warm main roof ridge is their favoured summer roosting spot. Brief internal inspections of the building during the autumn and early winter often find individual bats in deep torpor hanging in the chimneys or from the mantelpiece above the range. The success of this work brings its own problems: the building has become so suitable for the bats, it is now difficult to find times of the year when no animals are present, thus making regular maintenance work difficult to timetable.

The acquisition of each new reserve comes with its own set of problems and considerations. A small country church, disused for years due to falling attendances, has been re-opened, but only during the depths of winter. During the rest of the year the pews and other furniture are moved to the chancel and shut off behind a bat-proof screen. The floors, font and lectern are covered in protective material to shield them from bat droppings and urine, and internal shutters are fitted to the windows. The barrel ceiling, removed years before when woodworm had made it unsafe, has been reinstated, creating a warm roof void for the bats.

We have created a cold area at another building used as a summer roost, and where there is no obvious hibernation site nearby. This has been done by lining the walls of a ground floor room with insulation and forming alcoves to reduce air movement and stabilize the temperature. At a roost where the Trust has leased the upper floors of a coach house, soundproofing has been fitted to prevent the people using the ground floor from disturbing the bats. We have shored up the banks of a stream which was threatening to erode the walls of a mill being used as a roost. At another roost, in a building where the problems appeared insurmountable, an adjacent barn has been completely rebuilt.

Securing roosts for lesser horseshoe bats has been an important first step in the conservation of this endangered species and all the reserves have shown a significant growth in colony size. However, there is little point in providing colonies with a secure roost if their requirements in the wider countryside are being ignored, and lesser horseshoe bats have very specific commuting and foraging needs.

The changes in colony size at the Montgomery cottage following the aquisition by The Vincent Wildlife Trust



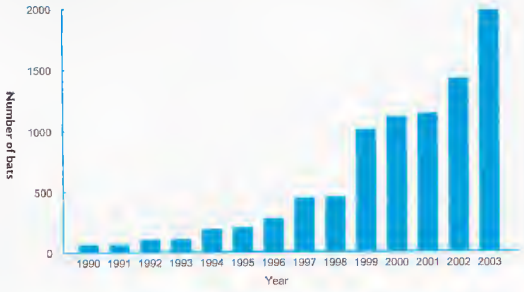
Foraging and commuting

As the bats in the Montgomeryshire cottage become active at dusk they make short tentative flights from the opening above the stable door before flipping over and returning to the safety of the roost. They are 'light-sampling', a behaviour that can also be seen on their return to the roost at dawn. This helps them maintain their internal time clock, as knowing when to wake up is important for an animal that roosts in total darkness. These tentative flights become longer until the light levels drop sufficiently for them to finally emerge from the roost. Hugging the walls of the building and flying low to the ground, they make a dash for the nearest vegetation and safety from avian predators like sparrowhawks. Lesser horseshoe bats produce the highest frequency echolocation calls of all the British species. High frequencies are excellent for detecting their small insect prey and allow them to forage in dense vegetation. However, the calls don't carry very far, making it difficult to detect approaching predators.

The cottage after restoration..

Once in the safety of cover, the bats make their way to their favoured foraging sites – areas of broadleaf woodland or waterside trees, usually within two kilometres of their roost. In getting to these sites, they face the same problem posed by their initial emergence from the roost – avoiding open areas. If they can stay within continuous woodland cover they will, but often they have to commute to their foraging areas along overgrown hedgerows or tree lines. If you walk across the field from the cottage to one of the hedgerows leading away from the roost and sit by a gap in the hedge, you can watch the bats flying under the hedge canopy. When they reach the gap they drop towards the ground and skim the surface of the grass until they reach the other side. As the light levels drop and the risk of predation reduces, the height at which they fly increases, until in the full dark of the night they make no ground hugging manoeuvres. Hedgerows don't just provide cover; they are a good source of insect prey and the bats will opportunistically take any suitable insect they come across. Most prey is taken in flight, with the bats swooping upwards and wrapping their wings around the target before dismembering it in mid-air. Occasionally these bats hang from a twig and scan their surroundings for flying insects before foraying out to catch them.

Cumulative total of lesser horseshoe bats in VWT reserves in Wales since 1990

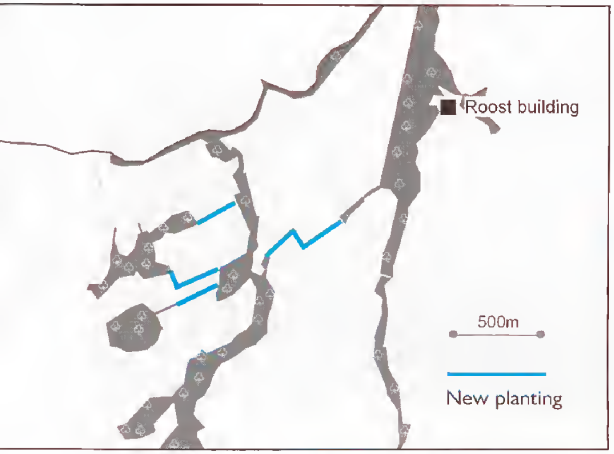


Habitat enhancement

Three hedgerows lead away from the Montgomeryshire cottage but only two are ever used as commuting routes by the colony. The third would require the bats to fly across 40 metres of open field before they reached it. This requirement for near continuous cover leading to foraging areas makes lesser horseshoe bats very vulnerable to wider landscape changes. The grubbing up of hedgerows or their dereliction leading to large gaps may effectively isolate perfectly suitable woodlands from the colony. In addition, changes to vegetation immediately surrounding roost buildings can dramatically change the colony's behaviour too. At one church in south Wales, a line of trees used by a colony as cover when leaving the roost was felled, leading to a delay in their evening emergence time of nearly an hour.

With this in mind The Vincent Wildlife Trust has instigated a programme of habitat enhancement around its Welsh reserves. Where cover immediately around the reserve has been poor, we have planted shrubs and trees. The habitat in a two-kilometre radius of the reserves has been mapped and suitable foraging areas identified. Then we have assessed the continuity of cover to those areas. Where we have identified gaps in continuity, we have approached the landowner to seek agreement to gap up or re-instate hedgerows.

An example of this work has been carried out at a reserve in mid-Wales. The habitat assessment identified excellent foraging habitat along two well-wooded dingles within a kilometre of the roost, but to reach one of them under continuous cover, the bats would have to fly a circuitous route of nearly four kilometres. In addition, there were two stands of broadleaf woodland with no linking hedgerows. By planting three new hedges and gaining agreement with a farmer to allow one of his hedges to grow out, the dingle will eventually be within a flying distance of one kilometre of the roost and the bats will have access to two new woodlands.



Habitat enhancement enables the bats to reach new feeding grounds.

At another site, a colony was isolated from a large area of woodland by an open field 300 metres across. The farmer has agreed to plant a new hedge linking the roost to the woodland. Back at the Montgomeryshire cottage, two large gaps in its surrounding hedges have been planted up and the vegetation within the boundary of the reserve is maturing well. The impressive growth in the number of residents at the cottage since the late 1980s is a heart-warming justification for the time and expense involved in securing and enhancing the building and its environs for the bats. Such work by The Vincent Wildlife Trust at key roosts throughout Wales has contributed enormously to the conservation of lesser horseshoe bats in the Principality. However, this species remains very vulnerable to adverse changes in the nature of its unprotected roost sites.

The future

The Trust is currently in negotiations to acquire four further lesser horseshoe sites in Wales and we are always keen to hear of other sites that might benefit from our attention. We often rely on the public to inform us when potential reserves may become available and the authors would be pleased to hear from anyone with information on lesser horseshoe roosts.

Henry Schofield and **John Messenger** work for The Vincent Wildlife Trust. Their contact details are:

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Tair erw ac ystlumod

Mae tyddyn anarferol ym mryniau Maldwyn – er ei fod yn cael gofal, mae'r ffenestri wedi'u cau gyda briciau a dim ond trwy dwll uwch drws un o'r stablau y gwelwch chi'r trigolion. Dyma un o warchodfeydd ystlumod Ymddiriedolaeth Bywyd Gwyllt Vincent – y cynta' o 12 yng Nghymru. Mae'r gweddill yn dilyn patrwm y warchodfa hon a brynwyd yn 1990 yn fuan ar ôl dod o hyd i'r boblogaeth o ystlumod trwyn pedol lleiaf, un o'n rhywogaethau mwyaf bregus. Mae angen tywyllwch, gydag agoriadau digon mawr i'r ystlumod hedfan i mewn ond sy'n ddigon bach i gadw gelynion allan. Ar ôl creu'r amgylchiadau ffafriol, fe fydd yr ystlumod yn cael llonydd a neb o gwbl yn ymweld yn ystod y tymor magu. Mae'r canlyniadau'n drawiadol – yn lle 60 o ystlumod 13 o flynyddoedd yn ôl, mae yna bellach 230. Mae gwylio arferion hela'r ystlumod o'r tyddyn yn dangos cymaint yw eu hangen am gysgod di-dor bron wrth hedfan allan i chwilio am fwyd. Dyna pam fod Ymddiriedolaeth Bywyd Gwyllt Vincent yn cydweithio gyda ffermwyr i wella cynefinoedd, gan greu a gwarchod gwrychoedd a phlannu llwyni a choed rhwng clwydfannau a mannau hela. Mae llwyddiant y tyddyn yn cyfiawnhau'r gwaith a'r costau.

What wildlife means to coalfield communities

Dan y Graig reserve, bought by mineworkers to preserve it as a beauty spot, and given to the Gwent Wildlife Trust in 1987. Photo: Gwent Wildlife Trust.

The wildlife of the south Wales coalfield has been little studied and much abused. Ancient habitats lie next to fascinating newer ones that have sprung up on the remains of the area's industrial past. Although heavy industry has died, the pressure on the environment remains relentless. ***Julian Branscombe*** *describes this rich and surprising natural environment and argues that, as its worth becomes clearer, it will come to be seen as a great regeneration asset.*

The south Wales coalfield is incredible. This dramatic landscape rivals that of the adjoining Brecon Beacons National Park, despite being marked by centuries of economic flux.

The human influence is apparent everywhere, from colliery spoil tips to the homes of a population twice that of Cardiff. So what is there for the naturalist? Pretty much everything you could want, if you can look past the Lambert & Butler packets and Carling Black Label cans which are all too characteristic of the urban fringe. The range of habitats is breathtaking, from pit tip heathland to open moor to species-rich grasslands and majestic veteran beeches lining lanes sunk into the valley sides.

The wildlife of the south Wales coalfield has been little studied over the years. Botanists and entomologists like Charles Conway (Victorian tin-plate works owner) and W Rait-Smith (early 19thC mining surveyor) were exceptions. Naturalists visiting south Wales were drawn to the Wye Valley or the Gower, rather than the black industrialised valleys.

The Valleys have changed greatly in the past 30 years as the coal and steel industries have been dying, and pit tips and slag heaps have been reclaimed or restored by natural revegetation. Otters now hunt brown trout in rivers that were once a soup of colliery waste. One life-long birdwatcher from Abertillery has commented to me that there was nothing in the Ebbw Fawr valley when he was a boy. Some of the current wealth of wildlife he now enjoys must have always been here, but as the landscape greens over, perhaps eyes are getting atuned to what is around them.

Heather recolonising at Pwll Du. Photo: Gwent Wildlife Trust. Inset: *Cowberries.* Photo: Tony Oliver.

The moth recording world was set alight in the 1970s with the discovery of the Silurian *Eriopygodes imbecilla*. This noctuid moth is still only known from one hill in the UK. A beautiful little Red Data Book moth *Oecophora bractella* came to my garden moth trap in Pontypool in 2003, just five miles from its only previous record, at Crumlin in 1860. Other excitements have included breeding Dartford warbler and superb grassland fungi assemblages. Many more naturalists are now drawn to the valleys' rich array of species and habitats, so we can expect more wildlife discoveries.

Lonely hills

The hills are wild places, little walked despite the mass of housing around. Most of the locals who do visit 'the mountain' seem to be off-road motorbike enthusiasts, and wrecked cars turn up in the most unlikely places.

Over-grazing is a problem in places such as Gelligaer Common, above Merthyr Tydfil, which is awash with ponies as well as sheep. Where grazing is heavy, mat grass and fescue dominates, with dwarf shrubs being limited to bilberry on the steeper slopes, providing scramble bikers haven't sent the peaty soil to the winds. Green hairstreaks fly in gorsey sheltered pockets in spring, accompanied by the twittering song of stonechat. Many valley sides are now a mass of bracken with scattered hawthorn, much loved by whinchats.

On some damp slopes the purple moor-grass is joined by inch-high cross-leaved heath, exiled wet heath patiently waiting a reduction in grazing pressure. This is still curlew country. Streams wind their magic down the slopes, the water teeming with invertebrates from the flattened nymphs of *Ceratapogonid* mayflies to the vaguely reptilian young stoneflies. Golden-ringed damselflies patrol overhead. As the rivers become cleaner, there is hope that shad and salmon will take a fancy to the coalfield tributaries of their River Usk stronghold.

Plenty of rain, permeable rocks and steep slopes are a recipe for flushes. These provide all sorts of treats for the botanist, from butterwort to ivy-leaved bellflower. Cornish moneywort can be found in one or two flushes in the central valleys. This is the habitat of small pearl-bordered fritillary caterpillars, which feed on the marsh violet. A relatively base-rich flush at The British, Abersychan, is notable for its mosses, including *Sphagnum teres* and *Scorpidium scorpiodes*, along with marsh St John's-wort.

Peaty pools, or old industrial reservoirs colonised by *Sphagnum* moss, cotton-grass, bulbous rush and bog pondweed, support keeled skimmer and black darter dragonflies. Soft rush has come to dominate large areas of rolling hill. This is often botanically poor, but graced by breeding snipe here and there. These are bleak places in winter, but the very occasional winter hill-walker will disturb plenty of snipe and the odd jack snipe.

Hills around Blaenavon are carpeted with dense heather, and still have red grouse, along with crowberry and cowberry. At Pwll Du just to the north of this small town, the heath is steadily recolonising high-altitude colliery waste. This was the location for a huge 1990 opencast coal extraction proposal. Celebrated opposition at the lengthy public inquiry led to these proposals being turned down. The land is now firmly part of the Blaenavon World Heritage Site, designated for its industrial landscape.

Woodland

In spring, oak woods ring with the songs of the characteristic triptych of wood warbler, redstart and pied flycatcher. In winter, these special places are green with moss. *Hypnum* and *Dicranaweisia cirrata* colour the tree trunks. Lime green strips of *Plagiothecium undulatum* and stiff curled sprays of *Dicranum majus* stick through the leaf litter.

Lasgarn Woods, on the limestone by Abersychan, has specialities such as bird's nest orchid and wood spurge. Its rich array of fungi includes *Grifola frondasa*, which produces dramatic clusters of caps at tree bases, and the pale chanterelle *Cantharellus ferruginascens*.

Trees on the slopes of the Silent Valley nature reserve.
Photo: Gwent Wildlife Trust.

The Silent Valley Local Nature Reserve, Ebbw Vale, is run by Gwent Wildlife Trust in partnership with Blaenau Gwent County Borough Council. Here, a mosaic of alder, sessile oak and beech woodland snakes up a side valley until gnarled beech trees can be found at 450 metres altitude. This may be the highest natural beech wood in Britain, all the more remarkable as this site is arguably at the extreme edge of the beech's natural geographical range.

Coalfield conifer plantations come in all sizes. They may be an affront to the ecological purist but they certainly have interest. Wood ant *Formica rufa*, goshawk, nightjar and long-eared owl are among the highlights.

Grassland gems

Where coalfield meadows and pastures have escaped agricultural improvement, beauties such as meadow thistle and saw-wort abound. A few damp, tussocky meadows still support the rare marsh fritillary butterfly, but its future is very uncertain. The fires of last spring damaged some of its sites, and the new regulations covering ploughing of unimproved grassland have just failed to protect a potential stepping stone sitting between two isolated colonies in the Rhymney Valley. The unforgivable 1990s opencast mining of Selar Farm Grassland SSSI in the upper Neath valley wiped out another marsh fritillary outpost.

Whorled caraway has a few sites in the coalfield, but it may have gone from its easternmost station near Blaina. Wood bitter vetch is another rarity scattered across the coalfield. It favours banks and grassy corners rather than managed swards.

Nature reclaiming the despoiled

The main coalfield habitat of that elusive tiny fern, moonwort, is now pit tips. The mosaic of heather, *Cladania* lichens and bare spoil is loved by mottled grasshopper *Myrmeleatettix maculatus*, grayling, emerald tiger-beetle *Cicendela campestris* and common lizard. The tramline networks (known locally as dramlines) around old mine adits are now usually picked out by fairy flax. An alien that has taken well to mining sites is pearly everlasting. North-facing tip slopes can support specialised moisture-demanding bryophytes, such as *Ptilidium ciliare*, a beautiful leafy liverwort.

Much of this colliery waste biodiversity goes unnoticed by most local people, but some species grab their attention. I remember the envy I felt when speaking to a man near Aberdare, who had had good views of a polecat hunting for rabbits on his local scrubby pit tips. Green woodpeckers excavating ant hills are often commented upon.

Older, small-scale pit tips are often interweaved with pieces of ancient countryside. Farmland is more likely to escape the ravages of agricultural intensification when it becomes more marginal as a result of mining. Good examples are threatened by the controversial Merthyr Village proposals, where pit tips and tramlines dotted with fairy flax surround close-grazed pastures pink with lousewort. Flooded bell-pits on the other side of Merthyr Tydfil supported great crested newts ten years ago. These pools, created by early mining, sat amid a species-rich sward. However, the site has since fallen casualty to 'restoration' driven by opencast coal mining.

People and wildlife share the industrial heritage of the coalfield valleys.
Photo: J. Cheetham-Wilkinson.

Yet more habitat is provided by quarries. Scarce blue-tailed damselflies seem to favour puddles in quarry bottoms or other disturbed ground across the coalfield. The limestone quarries around the edge of the coalfield are outstanding for their flora.

The largest colony of lapwing in Wales was on a poorly restored grassy spoil tip on the edge of Ebbw Vale. The site was chosen for industrial development, and preparatory work devastated the colony. The uproar this caused still exercises the Welsh Development Agency.

A characteristic of all the above post-industrial habitats is that they have re-vegetated naturally over decades. The contrast with the whale-backed, lurid green and characterless opencast coal restorations that blight many hilltops along the Heads of the Valleys Road, could not be more marked. Even where restorations have been for amenity and nature conservation purposes, the landscape feels neutered and the wildlife interest is often modest; most interest can often be found in patches where seeding has failed.

Use and appreciation

The south Wales coalfield has a poor image in the eyes of all too many local people. Often valleys people only become fully appreciative of this stunning environment when they return after a time working away. Yet families collect whinberries (bilberry) every summer, and country parks are well used. I regularly meet magic mushroom gatherers on my favourite waxcap grassland. However, off the beaten track it is unusual to meet anyone without a gun or a scramble bike.

Civic circles still seem eager to accept inward investment on any terms, regardless of the environmental cost. The growing opposition to these schemes may be the best sign that public appreciation is growing. The Sirhowy Enterprise Way, slicing through fen meadows and wet woodland around Blackwood, only got through with a massive fight.

A planning application for the last bit of countryside between Tredegar and Ebbw Vale, where ragged robin and *Sphagnum* had taken over, was the first to be turned down on wildlife grounds by the local Council. Tragically, that decision was overturned at appeal.

A current flashpoint is south Sebastopol: 200 acres of well-preserved medieval landscape between Cwmbran and Pontypool, faced with a proposal for 1,200 houses. Hedges of hazel and holly, flower-rich grassland, streams with white-clawed crayfish and otters are all under threat. Over 3,000 people are signed up opponents – local greenspace has never had a higher profile.

When fire rampaged through bracken and woodland in spring 2003, the effect on wildlife was a great concern. A local woman, Lynne Rees, contacted an old friend in the fire brigade, who then ensured that the Wattsville heronry was protected against the encroaching flames.

Attitudes are mixed however; persecution of wildlife, from badgers to birds of prey, remains rife. The finding of a headless peregrine made the front page of the Pontypool Free Press in 2002. Last summer a brooding barn owl was shot on the edge of the town, depriving locals of the uplifting sight of this beautiful bird.

The future – changing perceptions

One thing is clear. Too many people, including some in authority, undervalue the heritage (natural and historic) of the valleys. The Greening the Valleys initiative has been striving to change this, but the challenge of making people realise what they have got is still a big one.

We all now know that the natural environment is responsible for 20% of Welsh jobs. However, this economic potential is so much more than just directly linked employment. The valleys environment can – indeed must – inspire people to explore it and learn about it. The distinctive history, wildlife and landscape provide a unique selling point to draw in sensitive inward investment. Here we have a great place to live and work.

Photo: Gwent Wildlife Trust.

Children enjoying Silent Valley local nature reserve.

The Wildlife Trusts are at the forefront of efforts to get this perspective across. Over the last five years, the Silent Valley LNR has acted as a flagship for enthusing people about the valleys. Thousands of children from over 30 schools have had their eyes opened to the beauty of this site and its wildlife. Community use and involvement is at a high, thanks to the thriving Friends of Silent Valley group.

Just as wildlife can benefit people, there is great scope for more to be done for wildlife. With uneconomic forestry and marginal upland grazing juxtaposed with the industrial landholdings of declining industries and regenerating pit tips, really large areas for wildlife are there for the making. Community Strategies offer a golden opportunity to pursue these ambitious goals, and recognise the contribution that wildlife can make to the economy, learning, leisure, health and community cohesion.

I find living in the valleys absolutely liberating. Old railway lines and footpaths lead off in all directions; you are free to wander amongst a staggering biodiversity. We must influence the regeneration agenda to ensure this unique quality of life drives the coalfields' economic renaissance.

Acknowledgements:
In preparing this article I have been helped by more people than can be named individually. The community of naturalists and conservationists in the valleys is as warm as that of the part of Pontypool to which I have moved.

Julian Branscombe is the Chief Executive of Gwent Wildlife Trust.

Gwerth natur yng nghymoedd y glo

Mae angen sicrhau mai eu bioamrywiaeth rhyfeddol sy'n gyrru adfywiad economaidd y Cymoedd. Er gwaetha' canrifoedd o ddefnydd a chamddefnydd, mae eu tirwedd yn cymharu â Bannau Brycheiniog gerllaw.

Gyda gweddnewidiad y 30 mlynedd diwetha', mae dyfrgwn bellach yn hela am frithyll mewn afonydd a fu'n driog o wastraff glo. Cafwyd darganfyddiadau trawiadol, gan gynnwys gwyfyn unigryw, telor yr eithin a chlystyrau gwych o ffwng. Ar y bryniau, mae'r gweundir yn lledu eto a sgydau'n cynnig cyfoeth o blanhigion. Mae'r coedydd yn doreithiog, gyda Gwarchodfa Natur Leol Silent Valley yn arwain y gwaith o ysbrydoli pobl leol ynghylch natur.

Lle mae caeau wedi osgoi ffermio dwys, mae trysorau fel ysgall y ddôl, dant y pysgodyn mynyddig a glöyn brith y gors. Lle bo'r hen domennydd yn cael eu hadennill yn naturiol, yn hytrach na chael eu hadfer yn fwriadol, mae bywyd gwyllt llawer mwy cyfoethog.

Mae bygythiadau'n parhau oherwydd datblygu economaidd ac mae problemau gyda saethu ac erlid anifeiliaid. Ond, rhwng coedwigoedd aneconomaidd, tir pori ymylol, hen safleoedd diwydiannol a thomennydd ar eu newydd wedd, mae cyfle i gael ardaloedd eang o fywyd gwyllt i gyfrannu at economi, addysg, hamdden, iechyd a chydlyniad cymdeithasol.

Taking a closer look at micros

Alucita hexadactyla, *the twenty-plume moth, has a 16mm wingspan. The larvae feed on honeysuckle.* All photos: Michael Hammett.

With so many large moths visiting our gardens and surrounding countryside, few of us are aware of the array of micro-moths which live out fascinating lives almost under our noses. As ***Michael Hammett*** *points out, if you take some time to observe the little things around you, your curiosity will be well rewarded. You may then come to appreciate a little untidiness!*

Are you interested in wildlife but have not yet found the perfect niche? Would you like a healthy, relaxing pastime and a chance to make new discoveries? Do you enjoy trying to solve picture puzzles where two illustrations are placed side by side and you have to spot the difference? If the answer to these questions is 'yes', then I would like to introduce you to the world of micro-moths.

So what is a micro-moth?

They are not always smaller than our macro-moths but are in general 'primitive' species which evolved relatively early. Being primitive does not make them uninteresting. Their variety of wing shapes, patterns and coloration is truly amazing, giving some the appearance of living jewels. The smallest micro in the UK, *Stigmella microtheriella*, has a wingspan of 3.5mm, while one of the largest of our common species is the bee moth *Aphomia sociella*, with a wingspan of up to 38mm. In Britain we have just under 1,400 species, and even today very little is known about them.

You don't have to be an expert to get started. If you are between five years and 105 years old, even if you are wheelchair bound, you can enjoy micros. You don't have to be energetic, just observant. You will need to obtain an 8/10X-hand lens, a supply of glass sample tubes, some larger plastic containers, a butterfly net and possibly a beating tray. A small selection of identification books will also be needed. Learn the family and species names as you go along. There are experts available who will help you to identify your specimens.

Having got some basic equipment together, the next thing to do is to go out and find some specimens. Micros are all around you, in your house, your garden, in hedgerows, fields and woodlands. Apart from a few very common species, they are not often observed as adults and those captured are often quite worn. Only approximately 100 species are attracted to light traps. This is because most species fly only during the evening before dusk and just before daybreak. It is far better, therefore, to collect the larvae and rear them on to adults. You will find them on their foodplant, which will help to identify them. Both adults and their larvae can be found in any habitat from a salt marsh that is regularly flooded by the tides to the tops of the highest mountains.

The grass moth Catoptria margaritella *has a 22mm wingspan.*

Adult micros

Firstly, I would like to mention those species that can be captured as adults. Members of the family ***Crambinae*** (grass moths) and ***Pyralidae*** are easily disturbed during an evening walk and are also readily attracted to light. So, too, are members of the family ***Tortricidae***, which can sometimes be seen sitting on the surface of leaves during the day. Plume moths and the beautiful *Argyresthias* can also be captured in the daytime. Plume moths are quite easily disturbed as you walk through vegetation, while *Argyresthias* rest on the underside of leaves and can be caught by using a collecting tube, being swept with a net or being knocked into a beating tray. An evening walk can produce a vast number of other species that will be on the wing at that time.

Micro larvae

The most important thing to remember when looking for micro larvae is their lack of size and their ability to hide from view. They conceal themselves between spun shoots or leaves, mine the insides of leaves, stems or fruits, and feed under a silken web, inside rotting wood or plant roots. They also feed on ferns, mosses, lichens, fungi and all sorts of dried food materials. Each species has its own survival strategy, so you, as the hunter, have to bear this in mind. There is usually one or more species of micro that feeds on every native plant in the UK, so a good knowledge of botany is a great help. Most species have two broods a year, so if you wish to rear an adult without waiting too long, look for larvae of the spring brood. The books recommended at the end of this article give details of life cycles.

When searching for larvae it is important to spend some time observing the plant structure and patterns formed by the leaves. When you have done this for a few minutes, start scanning the leaves methodically and you may notice that some are different. There may be dieback, a rolled-up leaf, a swelling of a different colour, or contorted lines or blotches inside the leaf. You may then have found your larva. In time you will become much faster at recognising the spun leaves, leaf mines and other signs of activity. It is important for you to know that a large number of fly and beetle larvae feed in the same manner as micro-moth larvae. However, there are differences that can be learned in time.

Pyrausta aurata *has a wingspan of 17mm. Larvae feed on catmint, marjoram and mints.*

Phyllonorycter geniculella *has a wingspan of 8mm. Larvae feed on sycamore.*

Inset: Mine of Phyllonorycter geniculella.

Mine and larva of **Stigmella aurella** *which feeds on bramble and wood avens. Inset: adult moth.*

Phyllonorycter blandcardella, ***whose tiny larvae feed on apple. Inset: Mine of*** **Phyllonorycter blandcardella.**

Families

Here are some of the families whose larvae are reasonably easy to find. ***Nepticulidae*** larvae are mostly leaf miners, producing a gallery or blotch mine inside a leaf. When occupied, these are sometimes a little difficult to see but after the larva vacates the mine to pupate, it turns white, ochreous or brown. One of the commonest species is *Stigmella aurella*. This mines the leaves of bramble and wood avens and the abandoned mines look as though someone has scribbled over the leaf with a white pen. Stigmellid mines do not usually appear until late July and the second brood appears from September onwards. These produce the smallest moths that occur in the UK, with an average wingspan of 5mm.

The family ***Gracillariidae*** includes the *Caloptilias*, *Parornix* and my favourites, the *Phyllonorycters*. *Caloptilia* larvae usually start in a small mine along the midrib of a leaf and then feed inside a rolled section of the leaf. They pupate under a silken membrane attached to the underside. Larvae of the *Parornix* species are leaf rollers, starting with a small roll at the end. They move frequently to make new feeding rolls and pupate inside a silken cocoon partly hidden by a fold along the edge of the leaf.

Phyllonorycter larvae are the smallest, feeding and pupating in their mine. At first they feed under a silken membrane on the leaf layer next to them, slowly tightening the membrane so that the leaf becomes corrugated on the other side. Finally they consume most of the remaining layer before pupating inside the mine. These mines show as green or ochreous chambers or corrugated sections in the green leaves and are most easily located in tree leaves. There are two exceptions that do not behave in this manner.

You can easily find spun shoots and leaves on plants in the springtime. Larvae of *Tortrix* moths feed at the tips of young growth by spinning the leaflets together. This usually deforms the growing tips, which are easy to spot. Larvae in the family ***Depressariidae*** hide inside a silken tube in rolled leaves or young shoots and come out at night to feed. They are hyperactive and will explode from their hiding places if you touch them.

In this article I cannot mention all of the families of micros. However there is just one more that you may come across whilst out hunting. Larvae in the family ***Coleophoridae*** live inside specially constructed cases.

Some of the *Coleophoras* pierce a hole in the lower cuticle of a leaf and eat out the inner cells. They never leave their protective cases and move around from leaf to leaf leaving an easily recognisable transparent circle where they have been feeding. Others are harder to locate as they feed on developing seeds.

Food for thought

I would like to emphasise the important position that micro-moths hold in the food chain. Without them, native insectivorous birds would starve during the winter. The loss of micros due to habitat destruction in the summer months causes depletion of the larger predatory insects and so a vital food source for our summer migrants disappears. Worst affected are our bat populations, which have crashed as a result of the reduced numbers of insects. Unfortunately, due to the current practices of our farmers, who cut silage in June and trim hedges in September and October, populations of micros are declining rapidly.

Local Councils are also guilty of damaging habitats by endless cutting of road verges and hedge banks, and the removal and trimming of ancient hedgerows. Most of this activity takes place during the spring and summer months. In my area alone, the numbers of bats have become much reduced and noctule bats have not been seen for several years.

Phyllonorycter spinicolella, *whose larvae feed on blackthorn. Inset: Mine of* Phyllonorycter spinicolella.

Caring for larvae

Most leaf miners need no more than the leaf in which you find them. Leaf rollers do move from leaf to leaf as they grow but a couple of fresh leaves in their container will keep them happy. You will have to remove old leaves, as these will contain frass that will start to go mouldy. The same general rule applies to those that spin leaves together after they have moved onto fresh food. Remember, these larvae are small, so do not place too much food in their containers. I normally keep larvae in clear plastic screw-top containers 4.5cm in diameter and 6cm high. All food items must be fresh and dry. Wet food and condensation kills micro larvae, so keep them at an even temperature and never in direct sunlight. With the exception of leaf miners, do not be afraid to remove cocoons/pupae from vegetation that is going mouldy. Place them in a container on slightly damp toilet tissue, then wait for the results. Don't be afraid to ask for help if you are having problems.

Ypsolopha dentella *has wingspan of 21mm. Larva feed on honeysuckle.*

It is time someone pointed out that tidiness in the countryside does not compute with healthy wildlife. It is desperately important to conserve what is left of our wet meadows, unimproved grasslands, old hedge banks, ancient hedgerows and woodlands in order to protect the wide variety of insect life that forms part of the food chain for our birds and other animals. At the present time many of these habitats have become isolated and this is proving disastrous for the insects. The writing is on the wall!

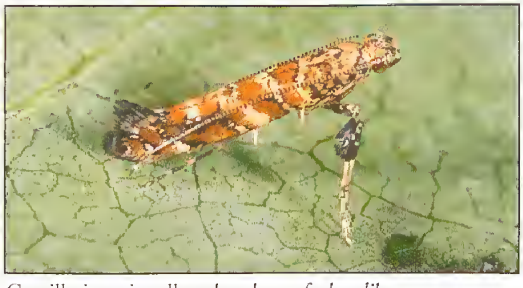
Recommended books: These are not illustrated but contain all the vital information you need.

A.M.Emmet. *A Field Guide to the Smaller British Lepidoptera* – Second Edition, November 1988. Published by the British Entomological & Natural History Society.
J.W.Tutt. *Practical Hints for the Field Lepidopterist* – The Amateur Entomologist Vol. 23. Published by the Amateur Entomologists' Society.

Nowadays there are several illustrated books available but you must choose which one you prefer.

Recommended Websites:
For leafmines go to: www.leafmines.co.uk
For adults go to: www.ukmoths.force9.co.uk

Michael Hammett is a photographer with a life-long interest in insects.



Gracillaria syringella, *whose larvae feed on lilac.*

Yponomeuta evonymella, *an ermine moth, has a wingspan of 22mm.*

Gwyfynod dan ein trwynau

Er bod bron 1,400 o wyfynod meicro o'n cwmpas ymhobman yn y DU, ychydig iawn a wyddon ni amdanyn nhw. Maen nhw' n rhyfeddol o amrywiol, o bob lliw a llun. Dim ond 3.5 milimedr yw lled esgyll y lleia', mae'r rhai mwya' tua 38 mm. Dydyn nhw ddim o angenrheidrwydd llai na gwyfynod macro ond maen nhw'n gymharol gyntefig.

Er bod rhai mathau yn weddol hawdd i'w dal, y ffordd orau i astudio'r rhelyw yw trwy ddal y lindys a'u tyfu. Mae'r lindysod yn fychan ac yn gallu cuddio'n dda ac mae fel arfer fwy nag un rhywogaeth yn bwydo ar bob rhywogaeth o blanhigyn brodorol.

Bellach, mae cynefinoedd y gwyfynod meicro'n lleihau oherwydd ffermio a thorri gwrychoedd a gallai hynny gael effaith llawer ehangach. Maen nhw'n ddolenni hanfodol yn y gadwyn fwyd – hebddyn nhw, bydd llai o bryfed mwy; heb y rheiny, bydd llai o fwyd i adar ac ystlumod.

Gardens – sanctuaries for wildlife

The pond at Plas Tan y Bwlch.

All photos: Kate Williamson.

It can sometimes be very difficult to argue against the need for new housing and new roads, but if concrete takes over the world, where is the wildlife going to go? It's estimated that the 15 million gardens in the UK cover more than 2 million acres – an area five times the size of Greater London. If only that huge area could be given over as a haven for wildlife, that would certainly ease the pain. In Snowdonia, ***Kate Williamson*** *is working with the Eryri Wildlife Gardening Project to encourage people to manage their gardens in a wildlife-friendly way.*

When we think of the pleasure that we get from our gardens, what are the main images that come to mind? Is it the sound of pollinating insects buzzing over the flower borders? Is it the myriad of colours, including peacocks, red admirals and other butterflies congregating over a buddleia? Or perhaps the purposeful robin hopping over the lawn, picking up grubs to feed its noisy youngsters? Whatever your images are, they will more than likely feature wildlife of some sort. But in recent years, as we struggle to grow bigger, better and earlier vegetables, introduce exotic blooms and rid ourselves of all those annoying garden pests, we have managed to push out a lot of our wild visitors too.

During the last 20 years, once common butterflies, and birds like the song thrush, greenfinch and even the house sparrow, have plummeted in numbers and now depend on gardens for their survival. Despite the fact that Snowdonia (called Eryri in Welsh after the eagles which once lived here) is evocative of a wild, natural landscape, the reality is that our gardens offer oases of habitat for wildlife within a largely sheep-grazed wasteland. By making small changes to the way that we garden, we can often transform them into our own personal nature reserves.

The Eryri Wildlife Gardening Project hopes to encourage people to manage their gardens in a way that is beneficial to both wildlife and themselves. There is an attitude around that 'wildlife gardening' means having an 'untidy' garden; just letting everything go wild. This is most definitely not the case. While there is certainly something to be said for leaving areas in your garden for nettles, brambles and thistles, there is no reason why a wildlife-friendly garden should not be a well-maintained, tidy and attractive place.

It is a popular subject and has turned out to be one of the most effective ways of involving the public in the local biodiversity process. One of the main aims behind the setting up of the project was to implement the Park's Gardens Habitat Action Plan. We have heard from many local gardening groups, schools, individuals and community projects and have also generated a fair amount of interest in the media.

In September 2003, the Project had two demonstration gardens at the Golwg 20/20 Sustainability Fair, held on the playing fields of Ysgol Ardudwy in Harlech. Here people were able to see for themselves some of the simple things they could incorporate into their own gardens to benefit the wildlife. One display showed the more traditional 'natural' garden look, whilst the other was a much tidier, 'neater' garden. There are such a number of bird boxes, bat boxes, ladybird houses, bird feeders, hedgehog boxes and even amphibian boxes on the market that there is bound to be a style to suit every taste. As long as the birds are happy, it does not matter whether we choose wrought-iron bird tables or hand-carved bird boxes – we can design our gardens to suit ourselves. The displays generated a lot of interest from members of the public who visited the show, as well as various gardening clubs, schools and other community groups.

The 'tidy' wildlife garden display.

Our gardens can also act as outdoor classrooms, where children can chart the changes of the seasons through the activities they witness at different times. Spring is full of hustle and bustle, birds calling for mates, gathering nesting material and laying claim to their territories. Flowers and shrubs burst into growth and blossom. Summer arrives, and the garden is at its brightest. Butterflies and bees are busy gathering pollen and nectar and the birds are rushing around trying to find enough food for their hungry young. Tadpoles metamorphose into small frogs in garden ponds. Bats hunt for insects in the long evenings: a single pipistrelle bat can consume as many as 3,000 midges in a night.

Autumn sees the garden at its most productive. If we choose the right plants they will be heavy with ripe fruit, nuts and berries; hedgehogs may be heard snuffling around in their search for slugs, and squirrels gather and hoard stores for the lean times ahead. Winter follows, and although the garden looks very quiet, life goes on. During bouts of especially harsh weather we are more likely to catch glimpses of elusive visitors like the fox, forced by hunger to be bolder. Winter bird visitors frequent the bird table alongside our year-round residents.

Wildlife gardening gives everyone with a garden, or just a window box or a few pots, the chance to help wildlife. And it is not only the wildlife that benefits. Working with nature instead of against it can often save both time and money, in very simple ways:

- Instead of using pesticides, which kill beneficial creatures as well as pests, allow hoverflies, ladybirds and hedgehogs to control the undesirables.
- Leave a pile of logs somewhere discrete to offer shelter to hedgehogs.
- Feed the birds and they will eat some pests while they are awaiting their turn at the table. It is important to keep food available all year round, and fresh water is crucial during heavy frosts and snow.
- Make a compost heap and recycle your vegetable waste, avoiding the temptation to buy peat-based composts, which threaten peatland habitats.

Different plants provide food for insects and birds at different times of year, so planting a suitable mixture will ensure a continuous supply of food, as well as providing a colourful, attractive vista all year round.

In order to celebrate the work involved, and the success people have with wildlife gardening, a competition, The Best Wildlife Garden in Eryri is run on an annual basis. The winners receive £200 with an additional £200 for the overall winner. In 2003 the winners, out of 65 entrants, were the Rhyd-y-Creuau Field Studies Centre, Betws y Coed (Best Business Garden), Jan Woods,

Minffordd (Best Private Garden), Ysgol Pennal, Machynlleth (Best School Garden) and St. Johns Church, Porthmadog (Best Community Garden), with Rhyd-y-Creuau FSC taking the overall prize.

It is hoped that the recognition given to the winners will help maintain the enthusiasm they have already shown. Jess Twycross, who does a lot of the gardening at St. Johns Church, spoke of the community spirit and effort behind their project after they heard they had won. "A lot of people help out and it's great for the church and everyone involved that we've done so well." Several of the winners pass on their expertise and experience to others by opening their doors to the public. Jan Woods says of her garden, "The garden is open anytime for people to come and see, but we try and arrange Open Days so that people can enjoy a cup of tea and cake while they're here too."

The Eryri project was initially set up to cover the National Park area, but has expanded to cover areas of Gwynedd and Conwy outside the park as well as within it. We try to run it in conjunction with existing schemes such as Gwynedd and Anglesey's *Green Schools* initiative and CCW's *Plant for Wildlife*.

At one time we were thinking of expanding the project to cover the whole of Wales, but there is something to be said for maintaining the local focus. We offer help and advice to LBAP groups or others who would like

Did you know...

- The relationship between plants and their pollinating bees was recognised as early as 1721 by Philip Miller, who noticed bees going from plant to plant in his garden. Plants have evolved many special features to lure and accommodate their 'partners', e.g. evening primroses look yellow to us but purple to bees, a colour they find particularly attractive. Geraniums have 'landing strips' on their leaves that only bees can see.
- Insects detect their nectar sources by colour and scent. It therefore makes sense to have your plant varieties in groups if possible. Planting a nectar border in full sun will ensure maximum use by butterflies and bees.
- Hoverflies and their larvae eat aphids, so encouraging them will provide good biological control of these pests. They are attracted to many of the small open flowered annuals, e.g. poppies.
- A log pile can provide shelter for a whole range of species, from hedgehogs, amphibians and small mammals to hibernating butterflies and other invertebrates.
- Beetles are the most common food of hedgehogs but earwigs, slugs and caterpillars are almost as popular. A hedgehog has been known to eat 63 caterpillars at a sitting. Small, grey field slugs are favourites but they will also eat the bigger ones; the record is 15cm long.

The wildflower meadow at Plas Tan y Bwlch. Inset: Pied flycatcher and golden-ringed damselfly.

to start up similar projects, and a course is being run this year for the first time at Plas Tan y Bwlch to that end (see p. 48). Last year we addressed the Royal Horticultural Society's Annual Conference in London, to 'spread the word'. We have also produced an information pack with advice on a range of subjects, from attracting mammals, insects and birds to your garden, creating a wildlife pond, pests and diseases, and composting. If you live in Snowdonia, we have species lists of native plants that are particularly suitable for the area.

Contact details:
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Snowdonia National Park Authority
National Park Offices, Penrhyndeudraeth
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Garddio er mwyn natur

Mae ein gerddi bellach yn ynysoedd o fywyd gwyllt ynghanol diffeithwch llawn defaid. Dyna pam fod Prosiect Garddio Bywyd Gwyllt Eryri yn annog pobl i arddio mewn ffordd sy'n helpu byd natur.

Bydd dewis planhigion yn ddoeth yn rhoi bwyd i greaduriaid ac yn sicrhau diddordeb trwy'r flwyddyn. Does dim rhaid i ardd wyllt fod yn flêr a gall hefyd arbed arian ac amser:

- Yn lle defnyddio plaleiddiaid, gadewch i bryfed eraill a draenogod wneud y gwaith.
- Rhowch bentwr o goed yn lloches i ddraenogod a bwydwch adar trwy'r flwyddyn.
- Crëwch domen gompost yn hytrach na defnyddio compost mawn.

Mae'r prosiect yn rhoi gwobr am yr ardd fywyd gwyllt orau ac yn cynnig gwybodaeth a chyngor.

Llên y llysiau: *rhedyn – mewn enwau lleoedd*

Y mae'r gyfres hon yn olrhain cysylltiadau llenyddol a hanesyddol gwahanol blanhigion. Trafod hanes y gair rhedyn mewn enwau lleoedd a wneir yn yr ysgrif hon gan ***Duncan Brown.***

A hoffech wybod mwy am brosiect Llên y Llysiau?
A hoffech wybod mwy am ddefnydd rhedyn a phlanhigion eraill?
A hoffech gyfrannu o'ch gwybodaeth eich hun i'r gronfa o ddata?

Cysylltwch felly â safle wê'r Gymdeithas
www.cymdeithasedwardllwyd.org
cliciwch ar y botwm *Llên y Llysiau* ... ac fe welwch safle newydd arbrofol y prosiect gyda chyfle i ychwanegu eich sylwadau ac i gyrchu'r wybodaeth a gasglwyd hyd yma. Rhowch gynnig arni, mae'n hawdd! Neu, os yw'n well gennych, rhowch nodyn ar bapur a'i anfon at **Haf Meredydd, 14 Stryd Wesla, Porthmadog, Gwynedd**.

Llên y Llysiau (the Lore of Plants) is a project initiated by *Cymdeithas Edward Llwyd* to collect information on the cultural connections of plants in Wales and to celebrate them. Data is available on the *Cymdeithas Edward Llwyd* interactive website. The *Llên y Llysiau* project group welcomes any contributions regarding the cultural connections of plants, either directly to the website or by mail to **Haf Meredydd, 14 Stryd Wesla, Porthmadog, Gwynedd**.

Beth mae enwau lleoedd yn eu datgelu i ni heddiw am natur rhedyn yng Nghymru yn yr oes o'r blaen, ac am y defnydd a wneid ohono? Mae'r dystiolaeth yn yr ysgrif hon yn dibynnu'n helaeth ar gronfa ddata Melville Richards. Dylid sylwi nad oes sicrwydd bob amser mai at y rhedyn ungoes *Pteridium aquilinum* y cyfeiria'r enwau. Dyma un o blanhigion mwyaf cyffredin y byd, a chymerir mai dyna a oedd dan sylw ymhob achos ac eithrio un enw o Fôn, sydd efallai'n cyfeirio at y rhedynen gefngoch *Ceterach officinarium*.

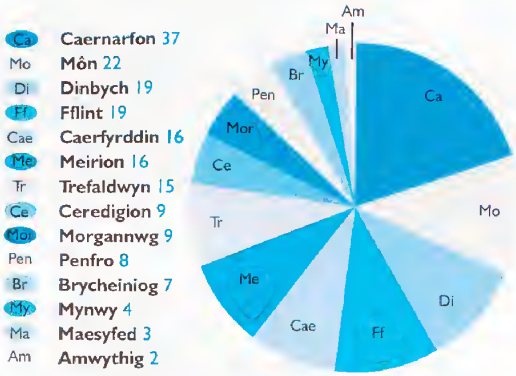
Mae'n weddol hawdd adnabod y cyfeiriadau at redyn mewn enwau lleoedd, ond mae'n rhaid bod yn ofalus wrth eu dehongli'r. Dyma'r ffurfiau ar y gair a gafwyd yn y gronfa: ***rhedyn***, ***rhedynog***, ***rhedynyn***, ***rhedynen***, a'r ffurf dreigledig neu seiliedig ar hen orgraff, ***redyn***. Ambell waith mae lle i gredu mai at fath gwahanol o redyn y cyfeiria'r enw (ee. *Ogo'r Rhedyn* ym Môn). Ni wyddys i sicrwydd pa mor gynrychioladol o holl enwau lleoedd Cymru yw casgliad Melville Richards. Bu'n rhaid sicrhau 'annibyniaeth' yr enwau, hynny yw, nad oedd yr un enw'n cael ei gyfrif ddwywaith gan ei fod i'w gael hefyd mewn enw arall, un cyfansawdd, o'r un ardal (ee. **Rhedynfre** ym Mhenmon, Môn, a **Penrhyn Rhedynfre** o'r un cyffiniau). Cafwyd un enw'n cynnwys ffurf amwys (i'r awdur o leiaf), sef **Rhedynys** (Meirion). Ai 'rhedyn–ynys' sydd yma, wedi ei droi, drwy ddadfathiad, yn 'rhedyn-ys', neu 'rhed-ynys' ynteu ai ffurf ar 'rhedynos' ydyw. Yr olaf sydd fwyaf tebygol.

Chwiliais yn y gronfa am enghreifftiau o enwau Saesneg wedi eu seilio ar ***fern***, ***brack/brac/brak***. Ni chefais yr un o Gymru (yr unig un a gefais oedd **Fernhill**, o Whittington, Sir Amwythig). Gwyddom yn iawn am **Ferndale** Morgannwg, cyfieithiad o *Glynrhedynog*. Mae'r cyfrif isel o enwau Saesneg yn awgrymu fod yr enw Cymraeg yn cynrychioli'r planhigyn dros Gymru benbaladr. Yn y Gernyweg ceir yr enwau lleoedd *Redinnick*, *Redannack*, *Redannick*, ac yn y Llydaweg *Radeneg* (Thomas, 1966).

Lle mae'r enwau i'w cael?

Mae *Ffigwr 1* yn dangos dosbarthiad enwau lleoedd sydd yn cynnwys ***rhedyn*** fesul hen sir (cyn ad-drefnu'r siroedd ym 1973). Gwelir bod tuedd i'r nifer ostwng wrth fynd i'r de ac i'r dwyrain – efallai am fod enwau cynhenid Cymraeg wedi dal eu tir yn well yn yr ardaloedd gogleddol a gorllewinol. Os yw hynny'n wir, fe ellid disgwyl yr un tueddiad yn achos enwau eraill. Dangoswyd, fodd bynnag, fod tuedd i'r gwrthwyneb yn achos enwau lleoedd yn cyfeirio at (g)**wern**, ac felly, yn yr achos hwn, tybiaf fod llai o enwau ***rhedyn*** tua'r de-ddwyrain am fod llai o redyn (neu ddefnydd o redyn) yn y parthau hynny, yn hytrach na bod mwy o enwau'n cynnwys ***rhedyn*** wedi mynd yn angof.

Y ganran o enwau lleoedd ym mhob hen sir (mewn trefn ddisgynnol) sydd yn cyfeirio at redyn (y ffigurau yn dangos y nifer)



Cynefin y rhedyn

Mae 156 (85%) o'r 183 o enwau lleoedd annibynnol sydd yn cynnwys ffurf ar y gair 'rhedyn' yn y casgliad yn cysylltu'r planhigyn â math arbennig o dir – enwau 'cynefinol' ydynt fel petai. Drwy Gymru gellir dosbarthu'r enwau hyn yn ôl tri math o gynefin, sef tir 'amaethyddol' (57 o enwau, 37% o'r enwau cynefinol), tir 'cysgodol' (55 o enwau, sef 35%), a thir 'agored' (44 o enwau, sef 28%).

Dewisiais yr enwau tir 'amaethyddol' yn ôl eu cysylltiad â'r geiriau canlynol: ***cae*** (ee. *Cae Rhedyn*, 35 o enghreifftiau, yr hynaf yn dyddio o 1478 ar ffurf *y kay rredyn*), ***maes*** (4), ***clun*** (4, yng Ngheredigion, Brycheiniog a Morgannwg), ***parc*** (2, yn y Deheubarth yn unig), ***dryll*** (2, ym Môn a Chaernarfon), ***erw*** (4 yn y Gogledd ac 1 yn y de), ***clwt***, ***gardd***, ***acre*** a ***dôl*** (un enw yr un).

Tybiwn mai'r enwau a gysylltai'r rhedyn â thir 'agored' oedd ***bryn*** (13), ***(g)allt*** (5), ***fron/bron*** (6, yn y Gogledd), ***cnwc*** (3), (pob un o'r rhain yn y deheubarth), ***cefn*** (3), ***pen*** (2), ***bar*** (bar yn golygu pen, blaen, copa, brig, (2) ond gweler isod) ***bre/-fre*** (ee. *rhedynfre*, 2, yn y Gogledd), ***ffridd*** (2), ***rhos*** (2), ***llechwedd***, ***gwar*** a ***common*** (un yr un).

Cafwyd hefyd **Gwaun Rhedyn Mân** (tir ymylol gyda thyfiant gwael yn cynnwys rhedyn efallai, o Ben-bre, Caerfyrddin), **Cop Rhedyn** (copa yw hwn), a **Belan Rydynock** (twyn mae'n debyg ond mae ystyron eraill i pelan, enw a gofnodwyd yn 1593).

Cyfrifais enwau'r tir 'cysgodol' yn ôl eu cysylltiad â'r geiriau canlynol: ***pant*** (36 o enwau), ***cil*** (10), ***glyn*** (3), ***nant*** (a olygai 'dyffryn') (3), un o bob un o'r enwau gyda ***cornel***, ***congl***, ***ogof*** (*Ogo'r Rhedyn*, ger Llaneilian, Amlwch), ***pwll*** a ***coetgae*** yn brif elfen ynddynt .Ystyr *coetgau* yw porfa mewn coedwig, cae wedi ei adennill o fforest, neu lain amgaeëdig. Cafwyd hefyd *Gwal y Rhedyn* yng Nghaerfyrddin, *y werne* Redynog yn Sir y Fflint yn dyddio o 1560. *Lan Teliau Cil Retin* (**Llandeilo Cil Rhedyn**) oedd enw hynaf y rhestr yn dyddio o 1130.

Ar ddechrau'r 19eg G. cyfeiriodd Hugh Davies (1813) at redyn mewn ogof ger Caergybi (heb fod mor bell â hynny o Laneilian):

S[colopendrium]. *Ceterach; Common Scaly Spleenwort: Rhedyn y Gogofau, Duegredyen feddygawl.* Very rare. *In caves in Holyhead mountain; become very scarce from being gathered for bait in rock-cod fishing!*

Dim ond y redynen gefngoch *Ceterach officinarium* ('rustyback fern' yn Saesneg) y gallasai hwn fod. Cyfeiria Roberts (1982) ati fel planhigyn cyfyng ei ddosbarthiad ym Môn. Dywed ei bod i'w cael ar forter waliau ond ni sonia am ogofâu. Nid oes ganddo gofnod ohoni yng nghyffiniau Caergybi ond mae un ym Mhenrhosllugwy (Plwyf Llaneilian). Mae'n debyg fod y rhywogaeth hon wedi ymledu ei thiriogaeth yn sylweddol yn ystod y ddwy ganrif ddiwethaf ar forter waliau. Roedd yn blanhigyn llawer prinach yng nghyfnod Hugh Davies. Mae'n parhau yn gyfyngedig i ardaloedd arbennig yng Nghymru. Deallaf mai pysgodyn o deulu'r gwrachod (*wrasse*) yw'r *rock-cod* ond nid yw'n hysbys i mi ym mha fodd y defnyddid y rhedynen fach ddinod hon i'w ddal.

O'r 35 o enwau sydd yn cynnwys yr elfen ***cae***, *Cae Rhedyn* yw'r ffurf fwyaf cyffredin ond ceir pump enghraifft o *Cae Rhedynog*. Awgrymaf fod ystyr gwahanol yn bosibl i'r ddau hyn, y cyntaf yn gae y tyfid rhedyn ynddo bron fel cnwd (megis *cae eithin*, *cae gwair*, *cae tatws*), a'r ail yn gae lle tyfai rhedyn er gwaethaf ymdrechion yr amaethwr i dyfu rhywbeth amgen. Defnyddid rhedyn fel sgrwff, gwasarn neu wely i anifeiliaid (gweler *Fferm* a *Thyddyn* 24, tud. 34) a hwnnw, yn gymysg a thail, yn gyfoethog i'w roi wedyn ar datws a llysiau'r ardd. Defnyddiwyd ef fel sail i das, fel defnydd to (cyf. *A'u dwndwr mewn rhedyndai*, Lewis Morris 18ed Ganrif), ac fel ffynhonnell potash i wneud gwydr a sebon, o leiaf yng ngogledd ddwyrain Môn.

Yn ôl y dystiolaeth ganlynol, fe'i defnyddid fel bwyd i foch hefyd:

Ôn i'n arfadd redyna i gasglu topa retyn
idd 'u [d]oti ym bwyd y moch
Enghraifft o dafodiaith ardal Nantgarw
(*Geiriadur Prifysgol Cymru*)

Dylid nodi bod rhedyn yn wenwyn i foch fel y mae i bob math arall o dda byw. Go brin, meddai Twm Elias, fod yr hen bobl yn hel cnwd o redyn yn fwriadol ac mai manteisio arno ar ôl iddo feddiannu tir a wnaent.

Fel y nodwyd eisoes, cafwyd llai o enwau tua'r de a'r dwyrain, ond amrywiodd y patrwm enwau rhywfaint o ran eu cysylltiad â gwahanol fathau o dir yn ôl rhanbarth hefyd. Cafwyd awgrym fod llai o enwau tir 'agored' na'r disgwyl, a mwy o rai tir 'cysgodol', yn y Canolbarth.

Yr enwau nad ydynt yn rhai cynefinol

Gellir rhannu gweddill yr enwau yn ôl (a) eu cysylltiad ag adeiladau neu weithgaredd, (b) eu naws disgrifiadol mewn rhyw ffordd, ac (c) yr anhawster i'w hesbonio (i mi o leiaf).

Adeilodou neu weithgoredd:
Unwaith eto, fel yn achos **cae** uchod, ni ellir barnu yn bendant ai adeiladau at ddefnyddio rhedyn ydy'r enghreifftiau canlynol, ynteu adeiladau â rhedyn yn rhan o'u gwneuthuriad, ynteu adeiladau â rhedyn yn digwydd tyfu ynddynt neu o'u cwmpas. Yn y grŵp hwn cafwyd *Beili Rhedyn*, *Buorth y Rhedyn*, *Rhedynglos*, *Gordd y Tŷ Rhedyn*, *Llety Rhedyn*, *Heol Rhedyn* a *Rhedynglawdd*. Cafwyd un enghraifft yr un o *Toforn y Rhedyn* a *Talwrn y Rhedyn*. Mae gan Iwan Edgar gof am ei fam Jane Jones yn son am 30 o dai to gwellt (gyda rhedyn yn rhan o'u gwneuthuriad) yng nghyffiniau Nefyn yng Ngwynedd tua 1900.

Enwou disgrifiadol:
Mae rhain yn cyfeirio at dir rhedynog yn benodol. Cafwyd saith enghraifft o *Y Rhedyn*, wedi eu dosbarthu ar draws Cymru, ac un *Tir Rhedyn*. Mae *Borhedyn (gw, uchod) yn cyfnewid* â *Byrhedyn*, gydag engreifftiau yn ardal Machynlleth a Llanegryn. Gallasai 'bar(r)hedyn' yn yr achos hwn awgrymu ystyr hollol gwahanol. Cyfeiriodd Aranwen Humphreys at Afon Hedyn yn ardal ei chartref **Melinbarhedyn** ger Machynlleth, sef y copa wrth yr Afon Hedyn. Cafwyd *Rhedyn Mowr* hefyd ac enwau nad ydynt ond yn cyfeirio at natur redynog y tir neu at ei liw; *Rhedynog*, *Rhedyn Boch*, *Rhedyn Cadno* (cyfeiriad at liw'r anifail, yr anifail ei hunan, ynteu enw personol?), *Rhedyn coch(ion)*, *Rhedynog goch*, *Rhedynos Goch*, *Rhedyn Rhuddion* neu *Rhedynog Felen* (rhan fwyaf o rhain yn y Gogledd).

Cafwyd hefyd un enghraifft o *rhedynossydd*, enw y mae Syr Ifor Williams yn ei drafod yn fedrus ac yn ddiddorol yn ei gyfrol Enwau Lleoedd. Ac yn olaf roedd un enghraifft bosibl arall – yn ogystal â *Rhedyn Codno* – o gyfeirio at berchnogaeth, sef *Rhedyn Morton*.

Enwou no lwyddwyd i'w hegluro eto:
Beth yw *Gryddyn Rhedyn*, a *Tip Rhedyn* tybed? Beth oedd ystyr *Llwybr Com Rhedynen?*

Diolch

Diolchaf i'r **Athro Hywel Wyn Owen** a'i staff yng Nghanolfan Ymchwil Enwau Lleoedd Prifysgol Cymru, Bangor, am eu cymorth wrth ddarparu'r deunydd crai ar gyfer yr erthygl hon ac i **Dr Iwan Edgar**, **Dr Rhisiart Hincks** a **Twm Elias** am eu cyngor.

Rhedyn (bracken or fern) in Welsh place names

Place names based on the word 'rhedyn' have been studied for the light that they may shed on the past distribution of bracken and the uses to which it was put. All names were taken to refer to the now abundant plant *Pteridium aquilinum* (bracken), except in the case of *Ogo'r Rhedyn* which appears to refer to the rustyback fern *Ceterach officinarum*. There are no place names with the English element fern or brac-. Their frequency reflects a wide distribution of bracken in Wales during the period from at least the 15th to the 19th centuries (based on its earliest mention in place names). The names become less numerous towards the south and east, which is thought to suggest less bracken and/or fewer uses of bracken in those areas, as opposed to the loss of names through anglicisation. Some names contain an element linked to one of three broad land types: *Bryn* (hill) *Rhedyn* features most in **open** land, *Pant* (dell, hollow) *y Rhedyn* in **sheltered** land, and *Cae* (field) *Rhedyn* in **cultivated** land. These elements are more or less equally represented geographically, except that **open** land is less well represented than expected in the mid-Wales area, while **sheltered** land is slightly more so. Some names linked to cultivated ground may suggest the use of bracken as a crop, as opposed to a place invaded by the plant. Names referring to features other than land type include some apparently linked to man-made structures, and some to the density and colour of bracken-infested land. Three of the names could not be easily explained.

Paratoi am **y dyfodol?**

Plant o un o'r ysgolion peilot yn derbyn eu pecyn oddi wrth Jane Davidson, Gweinidog dros Addysg a Dysgu Gydol Oes. Ffotos: CCGC.

*Mae **Meinir Wigley** a **Nerys Mullally** yn amlinellu'r prosiectau sydd ar y gweill a fydd, gobeithio, yn codi ymwybyddiaeth pobl ifanc ac eraill am eu hamgylchedd lleol.*

Dros y blynyddoedd diwethaf, mae plant wedi dod yn llawer mwy ymwybodol o faterion amgylcheddol ac yn pryderu mwy amdanyn nhw. Ond mae'r pryderon yma, gan amlaf, yn canolbwyntio ar faterion byd-eang, fel dinistrio fforestydd glaw a riffiau cwrel, a'r gostyngiad yn niferoedd anifeiliaid fel gorilaod a morfilod. Mewn gwrthgyferbyniad, ychydig maen nhw'n ei wybod am faterion amgylcheddol lleol.

Er hyn, mae'n bryder mawr fod y rhan fwyaf o bobl yn teimlo mai ychydig y gallant ei wneud i atal y difrod i'n hamgylchedd. Un o'n hamcanion ni fel Cyngor ydy cynorthwyo pobl ym mhob cylch bywyd i wneud y cysylltiad rhwng eu ffyrdd eu hunain o fyw a chyflwr yr amgylchedd, rŵan ac yn y dyfodol.

Mae'r system addysg yn canolbwyntio'n drwm ar ddatblygu sgiliau angenrheidiol sy'n galluogi pob unigolyn i wneud cyfraniad gwerth chweil at gymdeithas. Er hynny, mae'r un mor bwysig fod y system addysg yn cynorthwyo pobl ifanc i feithrin gwerthoedd cyfrifol o safbwynt amgylcheddol a chymhwyso'r gwerthoedd hynny at lunio penderfyniadau yn awr, ac ar hyd eu bywydau.

Fel cyflogwr, daeth yn amlwg i'r Cyngor fod angen addysg a hyfforddiant sy'n datblygu sgiliau ymarferol fel atgyweirio terfynau, plygu gwrychoedd, adeiladu waliau cerrig, ffensio, sgiliau saer a pheirianneg er enghraifft. Yr union fath o sgiliau sydd angen eu meithrin dros amser drwy system brentisiaeth.

Y dyddiau yma, mae llai o gyfle nag erioed o'r blaen i blant ddysgu am fywyd gwyllt a chefn gwlad. Mae'n bwysig felly ein bod ni'n annog ysgolion i ddefnyddio eu hardaloedd lleol i astudio natur a'r amgylchedd. Does yna ddim yn well na defnyddio'r synhwyrau i gyd i ysbrydoli disgyblion – gwrando ar gân yr adar, arogli'r blodau yn y gwrychoedd neu weld y dail yn troi eu lliw yn yr hydref.

Felly sut mae'r Cyngor yn mynd ati i ysbrydoli'r to ifanc?

Gall nifer o'n Gwarchodfeydd Natur Cenedlaethol fod yn ddosbarthiadau awyr agored gwerth chweil. Yma mae cyfle i ddisgyblion brofi addysg amgylcheddol ar ei orau – boed hynny'n astudio'r tirlun, daeareg, daearyddiaeth, planhigion, anifeiliaid, cynefinoedd neu effaith dynol-ryw ei hun ar yr amgylchedd.

Dros y blynyddoedd, mae'r Cyngor wedi cynhyrchu amrywiaeth o adnoddau ar gyfer athrawon a disgyblion o bob oed. Y gyfres ddiweddaraf ydy pecynnau bioamrywiaeth ar gyfer ysgolion cynradd. Mae'r uned gyntaf yn y gyfres yn sôn am byllau a nentydd. Bydd unedau ar goetiroedd a gwrychoedd yn cael eu cynhyrchu a'u dosbarthu yn rhad ac am ddim yn ystod y tymhorau ysgol nesaf. Trwy ddilyn y cynlluniau dosbarth o fewn y pecyn fe fydd disgyblion yn dysgu sut i chwilio am rywogaethau allweddol sy'n gysylltiedig â'r cynefinoedd hyn, gan roi rhyw syniad i ni pa mor iach yw'r cynefin. Yna, bydd y disgyblion yn dysgu sut a pham yr ydym yn gwarchod y cynefinoedd yma.
O fewn y pecyn ceir cyfres o gynlluniau dosbarth, nodiadau ar gyfer athrawon sy'n cynnig cefndir perthnasol am y cynefinoedd, adnoddau ar gyfer cefnogi'r profiadau dysgu yn y dosbarth, a syniadau ynglŷn â gweithgareddau pellach.

Drwy ddatblygu'r amgylchedd o gwmpas ysgolion – yr iard, a'r cae chwarae – gellir gwella adnoddau ar garreg drws er mwyn eu defnyddio yn gyntaf i ddysgu pynciau'r cwricwlwm ac yn ail i gyfoethogi bywydau'r plant ar athrawon yn ddyddiol ac ennyn diddordeb yn yr amgylchedd o'u cwmpas. Mae'r Cyngor wedi dechrau cydweithio â Learning Through Landscapes ac ysgolion penodol mewn pedwar awdurdod addysg yn ne Cymru.

O dan y gynllun Tir Gofal mae sawl ffermwr wedi dewis agor eu ffermydd ar gyfer addysg amgylcheddol. Golyga hyn fod plant yn medru dysgu am amaethyddiaeth a'r amgylchedd yn eu hardaloedd lleol. Gall y cyswllt yma hefyd weithio fel dolen gyswllt rhwng ein cymunedau gwledig a threfol.

Mae yna adran arbennig i blant a phobl ifanc rhwng 3-16 oed ar ein gwefan. Hyderwn fod y tudalennau lliwgar, sy'n gwadd plant i gymryd rhan mewn amryfal weithgareddau, yn fodd iddynt ddysgu drwy fwynhau eu hunain. Y nod yw creu delwedd a chynnwys ffres i'r adran hon ar gyfer ein hymwelwyr iau. Bydd y safle'n datblygu a thyfu dros amser wrth i athrawon ac eraill gynnig syniadau i ni eu cynnwys. A chan na fydd y safle'n statig, rydyn ni'n gobeithio y daw'r plant yn ôl dro ar ôl tro i ddysgu mwy. Gall athrawon ddefnyddio'r deunydd yn yr ystafell ddosbarth hefyd gan fod nifer o elfennau'n gysylltiedig â'r cwricwlwm cenedlaethol.

Comisiynwyd Theatr na n'Og gan y Cyngor Cefn Gwlad i greu cynhyrchiad theatr mewn addysg. Roedd yn gynllun peilot yr hoffem adeiladau arno gan ei fod yn cynnig cyfle euraid i ni gyrraedd cynulleidfa newydd, yn enwedig yn yr ardaloedd trefol. Wedi'r perfformiad a oedd yn ymwneud â'r hawliau mynediad newydd a ddaw i rym yn 2005, cymerodd y disgyblion ran mewn gwaith grŵp. Crëwyd adnoddau newydd i gyd-fynd â'r perfformiad, ac mae'r rhain yn awr i'w canfod ar ein gwefan.

Wrth gwrs, nid y Cyngor Cefn Gwlad yw'r unig gorff yng Nghymru sy'n cynnig adnoddau i athrawon. Dyna pam mae'r Cyngor yn aelod o Banel Llywodraeth Cynulliad Cymru ar Addysg ar gyfer Datblygu Cynaliadwy. Ymysg gwaith y Panel mae cyfraniad at ddogfen o'r enw Addysg ar gyfer Datblygu Cynaliadwy a Dinasyddiaeth Fyd-eang, a gynhyrchwyd gan ACCAC – Awdurdod Cymwysterau, Cwricwlwm ac Asesu Cymru.

Mae'r ddogfen yma yn llawn esiamplau. Mae nifer ohonynt yn amlygu gwaith ac arferion amgylcheddol da sydd i'w cael yn ysgolion Cymru ar hyn o bryd. Hefyd, mae'r ddogfen yn cynnwys canllawiau Estyn ar gyfer arfarnu ac arolygu'r math yma o waith.

Jane Davidson yn dysgu am fywyd gwyllt sy'n byw mewn pwll dŵr croyw ar dir ysgol gynradd yr Eglwys yng Nghymru Glas ar Wy gyda phlant yr ysgol.

Bu'r panel wrthi'n ddyfal hefyd yn sefydlu gwefan ddwyieithog bwrpasol i roi cymorth i athrawon ac eraill a oedd yn rhestru'r asiantaethau niferus a'r ystod eang o adnoddau sydd ar gael yn lleol yn siroedd Cymru. Gellir canfod yr wybodaeth yma ar www.adc-cymru.org.uk neu www.esd-wales.org.uk

O hyn ymlaen, bydd angen gweithwyr yng Nghymru sydd â sgiliau ymarferol ac academaidd ym meysydd cadwraeth, amaethyddiaeth, coedwigaeth, ac amrywiol feysydd gwyddonol a fydd yn cyfrannu at ansawdd ein bywyd a chyfoeth ein gwlad.

Er mwyn codi ymwybyddiaeth o hyn mae'r Cyngor yn cyfrannu ac yn gweithio mewn partneriaeth ag eraill i baratoi a hybu gwybodaeth a sgiliau cadwraethol sy'n berthnasol i bawb o wraig y tŷ, sy'n gofalu am blanhigion yn ei chartref, i'r ffermwr sy'n cynhyrchu ein bwyd. Mae'r gwahanol esiamplau uchod – sef addysg trwy gydol ein hoes – i gyd yn berthnasol ac yn cyfrannu tuag at ansawdd ein bywyd heddiw ac i'r dyfodol.

Mae **Nerys Mullally** yn Ymgynghorydd Addysg ac mae **Meinir Wigley** yn Swyddog Cysylltiadau Cyhoeddus gyda'r Cyngor Cefn Gwlad.

I gael mwy o wybodaeth ynglŷn â'r pecynnau, cysylltwch â llinell ymholiadau'r Cyngor Cefn Gwlad ar 0845 1306 229.

Educating for the future

The Countryside Council for Wales has produced a series of biodiversity teaching packs for schools, which it hopes will create a significant increase in awareness of their local environment amongst children. Children and young people are likely to be more aware of world environmental issues than of local ones and steps are being taken to correct this imbalance through the production of teaching aids and also by highlighting the need for training opportunities in countryside skills by means of apprenticeships. Offering National Nature Reserves as outdoor classrooms is another approach which is being encouraged.

Even the theatre is being utilized to present environmental productions followed by workshops in which children play an active part. CCW is not alone in this task. It is a major contributor to several joint projects with partners such as the Assembly Government's Panel on Sustainable Development and the Qualifications, Curriculum and Assessment Authority for Wales. All its efforts in this field are aimed at providing environmental education and training throughout life. For information about the education packs, contact the CCW enquiry line on 0845 1306 229. See also www.esd-wales.org.uk

Moving in – the fen raft spider in Wales

All photos: Michael J. Clark.

The natural history of Wales is so well recorded that you might be forgiven for thinking that there was nothing left to discover. Entomologists know better. But even they were not prepared for the discovery of Britain's biggest and most spectacular spider, the fen raft spider, in Wales, as ***Michael*** *and* ***Diana Clark*** *report.*

The story starts when I was a young boy growing up in East Sussex. While fishing on the Pevensey Levels in the late 1950s and early 1960s, I watched what my friends and I knew as 'giant spiders'. Many years later, while listening to the radio, I remember making a wry smile when it was announced that the fen raft spider *Dalomedes plantarius* had been discovered on the Pevensey Levels. Although as a boy I had not realised their significance, I had long been familiar with them.

This was not the first site in the UK known to have a population of the fen raft spider; they had been discovered at Redgrave and Lopham Fen on the Norfolk-Suffolk border in 1956. A few years ago we visited this reserve to photograph the spider: after several hours we found a juvenile specimen, which we were very excited to see. Little did we know that this species was to feature in our lives so prominently, right on our doorstep.

Over the last five years I have made regular visits to the Tennant Canal near Swansea to survey and photograph the variable damselfly population; this species itself is threatened by habitat degradation. I did not notice any *Dolomedes* spiders during this period. This is not surprising, as although these spiders are large – the fen raft spider is Britain's largest – their cryptic colouring means that they are easily overlooked.

Everything changed on a routine walk on a warm, sunny day in May 2003. While attempting to photograph two lizards basking on a silver birch log at the water's edge, I was attracted by a movement, which at first I thought was a water shrew. Closer inspection revealed a large spider further along the log, which I immediately recognised as being a *Dolomedes* spider. It could have been one of two species, the raft spider *Dolomedes fimbriatus*,

for which there was an unverified record in the vicinity, or the fen raft spider *Dolomedes plantarius*, the rarer of the two, known from only those two sites in the UK – Pevensey Levels and Redgrave and Lopham Fen.

The next stage was to contact the local spider recorder; we met at the canal to observe the spider and remove a palp for verification by Peter Merrett (one of the UK's leading arachnologists). A tense period of a week or so passed before it was positively identified as the fen raft spider – a species protected under Schedule 5 of the Wildlife and Countryside Act 1981.

What happens next?

The Countryside Council for Wales (CCW) were notified and ripples of excitement soon spread through the arachnological world. This discovery threw into question the ideal habitat for the spider. To glean more about the strength of the Tennant Canal population, I was contracted by CCW to carry out a survey of the site and nearby Crymlyn Bog and the Llansamlet area, both likely sites where there had been unverified historical records of *Dolomedes*.

During the summer of 2003, armed with a licence issued by CCW, I made countless visits to the area, getting to know individual spiders by their markings and movements. Eventually I became so in tune with their habits that I was able to predict where a web would be strung within yards of a female carrying an egg sac. Many of the intimate details of their life history, including courtship displays and mating, were filmed on digital video and 35mm transparency. There is much still to be learnt about their behaviour, which has rarely been seen and even less often filmed in the UK.

I searched the study areas for adults, juveniles, nursery webs and spiderlings, sometimes by boat, so that I could observe both sides of the bank-side vegetation. Highlights included the discovery that spiders were using some plants for web construction which were not known to be suitable for this purpose. The spiders also show a definite preference for open water for displaying or hunting and for using floating marginal vegetation. The fen raft spider is a fishing spider which uses sensory hairs on its front legs to detect prey, which include fresh water invertebrates, and even vertebrates as large as small stickleback.

The Tennant Canal near Swansea.

So far the spider has only been found in a very restricted area along the Tennant Canal, and a priority for any future management must be to enable the species to increase its population and spread along the canal. As part of the survey work, voucher specimens were sent for DNA testing, to ascertain if there is any link between the three known populations. Two exuviau (cast spider skins), twelve egg sacs and a dead spiderling were also sent to the University of East Anglia for analysis.

During the survey at nearby Crymlyn Bog, I found juvenile *Dolomedes* spiders, along with one adult guarding spiderlings. I collected a live juvenile specimen for research: it is being reared, to verify which species it is, as it is not possible to identify the species in its immature state. The results of the DNA testing and verification are awaited with anticipation.
As with so much wildlife, threats to the spiders' existence at this newly discovered site are always present. It is hoped that the information gleaned so far, and any future work, will help safeguard this rare and fascinating fishing spider.

Michael Clark is a wildlife artist, naturalist and photographer. **Diana Clark** is Administration Manager for the Wildlife Trust of South and West Wales.

Darganfod corryn Cymreig

Wrth geisio tynnu llun dau genau goeg y sylwodd Michael Clark ar rywbeth yn symud yn nŵr Camlas Tennant ger Abertawe.

Nid llyg oedd yno ond corryn rafftio'r gors galch – y math mwya' yn y DU. Hyd hynny, dim ond mewn dau le yn nwyrain Lloegr yr oedd wedi'i weld ac un o'r rheiny ger cartre' plentyndod Michael Clark.

Bellach, mae wedi astudio a ffilmio'r corynnod yn fanwl ac mae gwaith ar droed i ddarganfod a oes cysylltiad rhwng corynnod Cymru a rhai dwyrain Lloegr. Un o'r blaenoriaethau bellach fydd sicrhau fod y corynnod yn gallu ymestyn hyd y gamlas.

Protecting the aquatic environment from sheep dip

The run-off of chemicals after dipping can cause serious problems for our waterways. Photo: Environment Agency

Sheep numbers have increased dramatically in Wales during the past two decades. Most environmentalists are aware of the dangers that too many sheep, and too many sets of teeth, can mean for wildlife in the countryside. Fewer of us are aware of another danger posed by sheep, via parasite treatments. The uplands are particularly vulnerable to the incorrect disposal of sheep dip chemicals, which easily get into the vein-like network of watercourses, as ***Bob Merriman*** *explains.*

Although the overall number has fallen slightly since 1999, Wales still has the highest concentration of sheep in Europe with a population of nearly 10 million sheep and lambs.

This high sheep density, combined with less time available for shepherding, has increased the risk of ectoparasite infestations such as sheep scab. Farmers need to treat their sheep for parasites, but it is essential to do this with extreme care in order to protect the aquatic environment, especially streams and groundwater.

Although injections and pour-on products are becoming more popular as parasite control methods, dipping sheep in baths of powerful insecticide is still widely regarded by farmers as the most effective and economical treatment method, and many sheep are dipped twice a year. This practice has seriously affected the aquatic environment. Poor operating standards for sheep dipping have in the past been responsible for widespread pollution incidents, and in 1998 an estimated 1,200kms of Welsh rivers were damaged in this way.

Traditionally farmers used organophosphate (OP) based dips. OP dips are highly toxic to river invertebrates and can have a significant impact through the food chain on other river life, increasing fish mortality due to starvation. Even trace amounts of sheep dip have caused real damage, for example when washed off freshly dipped sheep as they cross a stream.

The problem of synthetic pyrethroids

Health risk concerns associated with using OP dips resulted in many farmers switching to synthetic pyrethroid (SP) dips in the late 1990s, as these were being promoted as safer to use.

Compared to OP dips, SP dips are at least 100 times more toxic to river invertebrates and may have a particularly serious impact on certain river species. In one pollution incident, simply switching from OP to SP dip is thought to have been the cause of crayfish deaths along a 2km stretch of river.

As well as the impact that sheep dip can have on river ecosystems, sheep dipping operations have the potential to affect other elements of the Welsh rural economy. Anglers fishing Welsh rivers bring in at least £65million each year, with much of this money going directly into local businesses like hotels, which in turn are important local employers. There are also over 30,000 private water supplies in Wales, many of which are in areas where sheep rearing predominates.

Photo: James Robertson.

Rivers like this can be at serious risk of contamination.

There are major concerns in some areas, notably the Upper Teifi in Ceredigion, about the use of unlicensed chemicals (especially SP formulations) for sheep dipping. A high proportion of those using unlicensed chemicals also have poor operating standards. They are undermining the progress made by the thousands of farmers who have obtained authorisations to dispose of used dip and are following good practice guidelines. As well as the toxicity concerns, these unlicensed formulations can wash off sheep more readily than proprietary dip compounds, representing a considerable risk to the aquatic environment; they also leave sheep inadequately protected.

Psoroptes communis ovis, *the sheep scab mite.*

Solutions and actions

Farmers need to treat their sheep for ectoparasite infections, although organic farming methods show how minimal and selective these treatments can be. Sheep dipping or showering should be kept to the minimum required for animal health needs.

The Environment Agency has produced a Sheep Dip Strategy and is working very closely with the farming industry and government to:

- Provide guidance to farmers and contractors, including a sheep dipping Code of Practice which, for the first time, brings all the key guidance into one document;
- Continue its successful public relations campaign, alerting farmers and contractors to some key dipping issues, such as:
  - the requirement to have an authorisation under the 1998 Groundwater Regulations for disposing of used dip, even if this only involves small quantities from mobile shower or 'jetter' units.
  - ensuring that dipping facilities have no drain hole within the bath and have good dip drainage areas that are connected back into the dip bath.
  - providing guidance on selecting suitable sites and highlighting the high pollution risk from using mobile units in or around farmyards.
- Develop ways to help reduce the risk of ectoparasite infestations on sheep flocks and thus minimise dependency on dipping and other treatments such as injections, which raise particular concerns about contamination of land. We have just developed a 'tool kit' for farmers, firstly to help them assess and reduce this risk and then to identify the most effective treatment. This approach should provide 'win-win' benefits in the form of cost savings to farmers as well as improved environmental protection.
- With the National Association of Agricultural Contractors (NAAC), we are developing a register of contractors who are each sent the latest guidance and receive other support or documents, so that they are aware of the latest developments and are able to provide a service to their clients that complies with legislation and minimises risks to the environment.

Photo: Environment Agency.

Dipping bath.

Changes to the relevant regulations associated with sheep dipping have helped to improve the situation and we are continuing our investigations into those who appear to have purchased unlicensed sheep dip chemicals.

The Agency has been working with farming unions and the National Sheep Association to improve awareness of good dipping practice. The industry has responded positively to these initiatives, and the number of pollution incidents related to sheep dip has fallen. There is still a lot more work that needs to be done, especially for upland rivers and streams, which have a special importance as salmon and trout nurseries.

Further reading:

Sheep Dip Strategy Report P237 (1999): produced by the Agency and forms the basis of Agency actions to combat impact on the environment from sheep dipping and contains 29 recommendations for improving the problems with sheep dipping.

The Groundwater Regulations 1998 require that anyone disposing onto land a wide range of chemicals, including all sheep dip compounds, can only do so in accordance with a written authorisation from the Environment Agency.

Flock Management & Ectoparasite Control in Sheep – Development of a Risk Assessment Strategy for Sheep Farmers, Report p 2 167 (2002) suggests risk assessment tools for ectoparasite infestation and identifies how farmers can deal with these risks. By minimising infestation risks and maximising treatment effectiveness, animal health can be maintained with minimal use of the chemical treatments used in sheep dipping.

Bob Merriman is Policy Advisor, Agriculture, for the Environment Agency, Wales.

Photo: Environment Agency.

Sheep shower in field.

Gwarchod afonydd rhag dip defaid

Gan Gymru y mae'r lefelau uchaf o ddefaid yn Ewrop. Os yw gor-bori'n achosi problemau amgylcheddol, mae cemegau trochi defaid hefyd yn gwneud drwg. Bu sawl achos o lygredd oherwydd trochi diofal – yn 1998, difrodwyd 1200km o afonydd Cymru felly. Mae'r hen gemegau organoffosffad yn wenwynig; mae hylifau pyrethroid synthetig ganwaith gwaeth i greaduriaid diasgwrn cefn. Gall llygredd wneud drwg i dwristiaeth pysgota ac i gyflenwadau dŵr preifat ac mae pryder mewn rhai ardaloedd tros ddefnydd o gemegau didrwydded. Mae ffermwyr diofal yn tanseilio gwaith da y gweddill. Mae Asiantaeth yr Amgylchedd yn gweithio gyda ffermwyr gan greu Côd Ymarfer ac awgrymu ffyrdd eraill o leihau parasitiaid ar ddefaid. Er bod pethau'n gwella, mae llawer o waith ar ôl.

Nodiadau'r **Cynulliad** / **Assembly** *Notebook*

gan / by **Gethyn Williams**

Rwy'n dechrau colofn y chwarter yma trwy gyflawni dyletswydd y mae Aelodau'r Cynulliad yn mynd i'r afael â hi'n rheolaidd: datgan budd. Mae sefydliadau sy'n aelodau o Gyswllt Amgylchedd Cymru (WEL) – sef y rhwydwaith cenedlaethol sy'n sicrhau bod bara organig lleol ar fy mwrdd brecwast bob bore – wedi dod ynghyd y gwanwyn yma mewn ymdrech i ddod â'r amgylchedd yn nes at frig yr agenda wleidyddol yng Nghymru.

Yn ystod y chwe mis diwethaf, mae ein haelodau wedi cytuno ar gyfres o bwyntiau gweithredu yn ymwneud â 14 o feysydd polisi, er mwyn galluogi'r Cynulliad i wella ei safon amgylcheddol cyffredinol. Lansiwyd hyn ym mis Chwefror, ac aeth aelodau o'n rhwydwaith i'r afael a'r dâsg uchelgeisiol o gyfarfod â holl aelodau'r Cynulliad – 60 i gyd – i drafod ystod eang o bryderon amgylcheddol. Yn yr etholiad nesaf, rydym yn edrych ymlaen at bwyso a mesur ymdrech ein cynrychiolwyr etholedig yn ystod y tymor.

Fel y gŵyr y rhai ohonoch sy'n darllen y golofn yma'n gyson, mae Llywodraeth y Cynulliad yn cynhyrchu llu o ddogfennau strategol sy'n plethu drwy'i gilydd. Mae'r sibrydion diweddaraf sydd wedi goglais ein clustiau yn ymwneud â Strategaeth Amgylcheddol Cymru, sef dogfen yr addawodd y Gweinidog Carwyn Jones y byddai Llywodraeth y Cynulliad yn ei llunio ddiwedd y llynedd. Beth yn union fydd ei ffurf, pwy fydd yn ysgwyddo'r cyfrifoldeb drosti, a sut y bydd yn cysylltu â strategaethau eraill y Cynulliad? Nid ydym yn gwybod eto; ond mae'r Gweinidog wedi awgrymu y bydd y broses ddatblygu yn debyg i'r un a welwyd gyda Ffermio i'r Dyfodol. Mae'r dull yma wedi bod yn unigryw o effeithiol – penodi grŵp llywio yn cynnwys pobl â buddiannau gwahanol i lunio strategaeth ddrafft sydd yna'n cael ei rhyddhau i ymgynghori yn ei chylch.

Mae Llywodraeth y Cynulliad yn gobeithio penodi rhywun i reoli'r cyfan erbyn mis Ebrill, ond fydd pethau ddim yn cael eu rhoi ar waith o ddifrif tan hydref 2005 fan gyntaf. Er y bydd hyn, o bosibl, yn rhy hwyr i alluogi'r gwaith yma i gael ei ystyried ochr yn ochr ag adolygiad datblygu cynaliadwy'r Cynulliad, mae'n ymddangos fod yna rywfaint o fudd i'w gael trwy dreulio amser yn llunio dogfen werth chweil, hawdd ei deall, sydd wedi ei hintegreiddio'n iawn.

Ond beth am droi ein golygon yn ôl at faterion cyfredol. Wrth i'r diwygiadau i'r Polisi Amaeth Cyffredin barhau i rygnu ymlaen, mae trafodaethau ymhlith rhanbarthau'r DU yn canolbwyntio ar sut y bydd y taliadau fferm sydd newydd eu datgyplu yn cael eu cyfrifo. Mae'n ymddangos ein bod yn wynebu dewis rhwng taliadau yn seiliedig ar arwynebedd tir, y cyfraddau hanesyddol a ddefnyddir i roi cymorthdaliadau i ffermwyr, neu gyfuniad o'r ddau. Ymddengys fod Lloegr a Gogledd Iwerddon o blaid dull sy'n cyfuno'r ddwy elfen, tra bo'r Alban a Chymru'n tueddu i ffafrio'r dull hanesyddol.

Cred Carwyn Jones y byddai dull sy'n seiliedig ar arwynebedd – y dull sy'n cael cefnogaeth carfan wasgu amgylcheddol Cymru – yn creu cryn drafferth, ac yn byddai dull sy'n cyfuno'r ddwy elfen y soniwyd amdanynt uchod yn rhy gymhleth. Felly, mae'n ymddangos mai'r 'taliadau hanesyddol' fydd yn ennill y dydd – sef dull y mae undebau'r ffermwyr wedi dadlau yn danbaid o'i blaid, a dull a fydd yn dod â'r elw mwyaf i'r rhai sydd wedi gweithio yn y ffordd orau dan yr hen system.

Gethyn Williams yw Swyddog Gwybodaeth y Cynulliad ar gyfer Cyswllt Amgylchedd Cymru. I gael copi o daflenni gwybodaeth CAC, *Sicrhau Amgylchedd o Well Safon yng Nghymru*, cysylltwch â swyddfa Cyswllt Amgylchedd Cymru ar 01970 611 621.

I begin this quarter's column by fulfilling a duty our AMs regularly undertake: declaring an interest. Member organisations of Wales Environment Link (WEL), the national network that puts locally-sourced, organic bread on my table, have come together this spring in an effort to push the environment further up the political agenda in Wales.

Over the last six months our members have agreed a series of action points over 14 key areas of policy, to enable the Assembly to improve our overall environmental standard. Launched in February, representatives from our network undertook the ambitious task of meeting all 60 AMs personally, to discuss a broad range of environmental concerns. At the next election we look forward to judging our elected representatives on their efforts in this term.

As regular readers of this column will know, the Welsh Assembly Government (WAG) produces a plethora of interweaving strategic documents. The latest whispers to reach our ears concern the forthcoming Environmental Strategy for Wales, which Minister Carwyn Jones committed WAG to producing late last year. What form it will take, whose responsibility it will be and how it will relate to other Assembly strategies, we are yet to learn, but the Minister has hinted that the development process will be similar to that employed with Farming for the Future. This method proved uniquely effective – a steering group of varying interests appointed to produce a draft strategy which was then subject to wider consultation.

WAG are hoping to have someone in post to manage this by April, but the earliest we could expect it to go live would be autumn 2005. Whilst this may come too late to be properly considered alongside the review of the Assembly's sustainable development scheme, there does seem some benefit in taking time to produce a properly integrated, worthwhile and user-friendly document.

Back with matters current, and as the grand train of CAP reform enters its umpteenth stage, discussion amongst UK regions is focused on how the newly de-coupled single farm payment will be calculated. We appear to face a choice between payments based on land area, the historical rates on which farmers have been subsidized or some combination of the two. England and Northern Ireland seem to favour this hybrid approach, with Scotland and Wales edging towards the historical basis.

Carwyn Jones believes an area-based approach, favoured by the Welsh environmental lobby, would be disruptive, and that a hybrid scheme would be too complicated. The 'historic payments' approach, which the farming unions have strongly argued for, and which will benefit most those who have worked the old system best, looks certain to win through.

Gethyn Williams is Assembly Information Officer for Wales Environment Link. For a copy of the WEL briefing sheets *Delivering a Better Quality Environment for Wales*, contact the WEL office on 01970 611 621.

Green **Bookshelf**
Silff Lyfrau *Amgylcheddol*

Arable Plants – a field guide

Phil Wilson and **Miles King**,
English Nature and WILDguides, 2003
£15.00 Hardback
ISBN 1-903657-02-4

This book is published primarily for an English audience but it should still interest Welsh botanists – and farmers. It is a handsomely illustrated guide to the rare arable plants of Britain ('weeds' to you and me) with a detailed historical introduction and account of their significance on a European stage. It is surprising to discover, for instance, that the first evidence of agriculture in Britain (subfossil cereal pollen) dates back over seven and a half thousand years to the Isle of Arran, Scotland: present-day weed populations can, perhaps, be thought of as living archaeology, like bronze axes or Roman coins (which they came in with in this country).

Above all, though, it is their precipitous recent decline and the possible mechanisms for recovery which *Arable Plants* sets out to address. Seed-cleaning equipment, chemical fertilizers and herbicides, competitive new crop strains and the shift to permanent pasture have all decimated weed communities – and with them a whole tier of small birds, mammals and invertebrates (not to mention their predators) which depend on these plants for food. The remedy is to reinstate unsprayed headlands and field margins – but mostly where living seed banks remain. There may still be viable populations of arable plants under former oatfields all over upland Wales and in the historic coastal grainbelt (now mostly pasture), but these will soon pass away. This book is a blueprint for the necessary action but – with the exception of a great key to fumitories – it is not handy for species-identification. The absence of any detailed description of the more widespread plants will also disappoint a general reader. Nonetheless, this is the best (ie. the only) book of its kind and could help save a few species from extinction.

Andy Jones

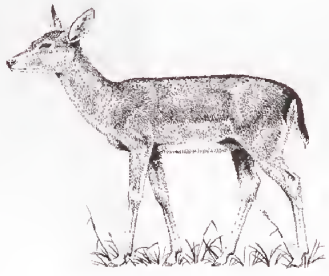
Fallow Deer

Jochen Langbein & **Norma Chapman**
The Mammal Society & The British Deer Society, 2003
£3.50 (incl. p&p) ISBN 0 906282 40 3

This latest book in the British Deer series tells you everything about fallow deer that you are ever likely to want to know. Well written and illustrated, it covers everything from details of how a deer sees the world (fewer colours than humans, but better night vision) to the wider aspects of deer management and the very real threat, to deer and people, of fatal road accidents. I was astonished to learn, for instance, that the average birth weight of a fawn is only the same as a (slightly hefty) newborn human baby. Sensibly, the does leave them lying camouflaged under ferns and nettles for the first few weeks, a practice that humans would do well to adopt rather than trying to manoeuvre their young round the supermarket. This is a successful species and, in the absence of large predators in this country, populations increase and culling becomes necessary to prevent overgrazing. The meat is generally regarded as the best venison and is increasing in popularity, at least to non-vegetarians, as it is additive-free and welfare-friendly.

Copies available from The Mammal Society 020 7250 2200, gshearer@mammal.org.uk

Mandy Marsh



Naturiaethwr Mawr Môr a Mynydd

Dewi Jones, 160 tud., Gwasg Dwyfor, £12.50 ISBN 1-870394-84-4

Campwaith gan Dewi Jones sydd, yn y gyfrol hynod o ddarllenadwy hon, yn cyflwyno bywyd a gwaith y naturiaethwr J. Lloyd Williams (1854 – 1945). Portreadir yma ŵr sy'n ffitio i'r dim ein delwedd o Gymro diwylliedig gododd o gefndir gwledig di-nod i fod yn Athro Botaneg ym Mhrifysgol Aberystwyth. Roedd hefyd yn awdur a cherddor o fri – yn arweinydd côr, eisteddfotwr a chasglwr alawon gwerin.

Cafodd yrfa ryfeddol. Ei benodi, yn 21 oed, yn Brifathro Ysgol Garndolbenmaen lle y bwriodd ati i ennyn diddordeb y plant mewn byd natur a daeareg mewn dull goleuedig oedd ymhell o flaen ei oes. Buan y daeth yn arbenigwr ar blanhigion arctig-alpaidd Eryri a difyr yw ei hanes yn llysieua ar y creigiau, gan ddilyn yn olion traed rhai o'r llysieuwyr cynnar.

Yn 1893 aeth i Brifysgol Llundain i astudio Botaneg ac oddiyno yn 1897 i Brifysgol Bangor. Ymddiddorai yn y gwymonau ac yno manteisiodd ar y 'lab orau'n y byd', sef culfor Menai, i astudio'r pwnc. Daeth ei waith arloesol mewn gwymoneg ag ef i sylw rhyngwladol. Yna, yn 1915, fe'i penodwyd yn Athro Botaneg ym Mhrifysgol Aberystwyth lle cyfranodd i sawl maes botanegol.

Ef oedd awdur "Byd y Blodau" (1929) a gwnaeth gasgliad pwysig o enwau Cymraeg ar blanhigion. Ymddiddorai mewn casglu alawon gwerin ac roedd yn un o sylfaenwyr selocaf Cymdeithas Alawon Gwerin Cymru. Erys ei hunangofiant: "Atgofion Tri Chwarter Canrif" yn glasur.

Dyma hanes gŵr rhyfeddol iawn ac, yn sicr, yn un o'r cyfrolau difyrraf a ddarllenais ers amser.

Twm Elias

Marine *matters*

Welsh islands round-up: Skomer & Skokholm

Collated by **Geoff Gibbs** from material supplied by
Juan Brown (Skomer) and **Graham** & **Theresa Thompson** (Skokholm)

With the advent of the 'sea safari' boat around the Pembrokeshire Islands, there has been a huge number of incidents around Skokholm in the last two years. To help combat this, a Pembrokeshire Coastal Forum has been established. A number of 'marine codes' have been drawn up in a joint effort by the Wildlife Trust, Countryside Council for Wales, Pembrokeshire Coast National Park Authority, RSPB, Dyfed Powys Police and local site managers. Based on existing codes and experience, these codes take into account the requirements of relevant European and UK wildlife legislation. For Skokholm, this covers its nesting seabirds, hauled out and pupping seals, and cetaceans. The island staff had high hopes for a more peaceful summer for the wildlife, but the codes are only voluntary. The first boats were in Skokholm waters on 22 March, but there were no seals or birds present to see, let alone disturb! One operator was subsequently very helpful during the season, others not at all so. Continuing efforts will be made to encourage these people to be more sensitive to the wildlife they are exploiting.

Lepidoptera

Large numbers of migrant butterflies and moths were recorded on Skomer in late August, with an invasion which included roughly 16,000 silver Ys, 3,000 painted ladies, 2,500 small tortoiseshells, 1,500 red admirals, and four clouded yellows. September continued in the same vein, with good numbers of hummingbird hawkmoths (including seven on 21st and four on 26th) and clouded yellows. Three convolvulus hawkmoths were recorded, and the island's second striped hawkmoth was found on 21st September. The fact that the latter was initially spotted on its resting rock out at Bull Hole was remarkable enough, but even more amazing was that when it was translocated to North Haven for a photo-shoot, a convolvulus hawkmoth was spotted resting just inches away from where the striped had been moved to!

Unusual butterfly records on Skokholm this year included singles of ringlet, speckled wood and wall. A convolvulus hawk-moth on 3rd September was only the third record for the island, the first being in the 1930s (R.M. Lockley), the second in the 1960s.

Cetaceans

There was a momentous occasion off Skokholm on 14th May, when a pod of five killer whales was sighted about a kilometre to the south of the island, milling about in the same position for almost two hours. This is just the third record for the island. Common dolphins and harbour porpoises were seen on numerous occasions throughout the season. A good number of common dolphins was seen from Skomer this year, with more closer inshore than usual.

Birds

The hen harrier from a nest on the Lizard was still present on Skomer when staff returned in March. Exciting visitors in the spring included a hoopoe, a male golden oriole (catching big hairy caterpillars in the North Valley heather), and a bee-eater flying over on May 1st.

Breeding seabirds on the island had mixed fortunes. An estimated total of 11,064 lesser black-backed gull nests were occupied. This is 27% down on last year, and the lowest population estimate for at least 23 years. This is not wholly surprising in the light of continuously poor breeding success during the past decade, but productivity in 2003 was actually higher than previous years, at 0.41 chicks per nest. By contrast, great black-backed gulls continued their steady increase (now 84 pairs – the highest figure since 1981), with a breeding success of 1.40 chicks per pair, the second highest on record.

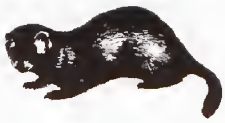
Guillemots (now 14,676 occupied sites) only increased by 1.7% on last year – consistent with the apparent slowing down of population growth over the past three years following the species' dramatic expansion. Autumn migration started well, with red-backed shrike, three little egrets (only the fourth island record), osprey, corncrake, pectoral sandpiper, a string of wrynecks, and rosy starling already logged by the last week in September.

Guillemots.

Photo: Michael Hammett.

Nature *at large*

Frances Cattanach provides a round-up of mammal news



On 1st January, the Vincent Wildlife Trust and the Mammal Society launched a new **Polecat Distribution Survey** of mainland Britain. The survey will be conducted mainly through people collecting bodies (e.g. road casualties) and sending them or photos of them to the VWT, who are also recording feral ferrets. The bodies (or photos) are needed so that they can identify specimens as true polecats or ferret hybrids. The specimens will be donated to the National Museums of Scotland, where they will be made available for research, such as analysing the rodenticide burden in a sample of polecats.

If you find a relatively undamaged polecat, feral ferret or polecat-ferret hybrid in the period 2004-2006, please keep it cool and 'phone the VWT on 01531 636441 for guidance on what to do. Please note that, so as to spread their effort as evenly as possible, VWT aim to collect no more than two specimens from each 10km square.

The dunes of Morfa Dyffryn National Nature Reserve are proving to be an ideal site for polecats. A recent trapping exercise, reported by Kate Williamson of Snowdonia National Park, has revealed the highest density of animals recorded in the UK. Over an eleven-night trapping period, at least 17 individual animals were caught. Amazingly, on one night's trapping, eight different animals were caught from only 11 traps set.

The search for the elusive Snowdonia **pine marten** continues. The rarity of the beast means that information from the public is vital to determine the pine marten's distribution. Trying to ascertain the credibility of sightings is an art in itself, and the Vincent Wildlife Trust have devised an ingenious questionnaire, which tries to gauge objectively the likelihood of it being a true pine marten record. An appeal for sightings by Snowdonia National Park Authority last summer resulted in a number of very good sightings using the VWT questionnaire. VWT established two baited platforms, with remote sensing camera equipment, during most of 2003, but unfortunately no martens were snapped. In early 2004, these two platforms, and a further two (funded by the People's Trust for Endangered Species and the Countryside Council for Wales) will be positioned in areas where the appeal has resulted in clusters of 'good' sightings. Maybe then this fascinating mammal will finally show itself.

Otter road casualties continue to cause concern throughout Wales, including one on the cob at Porthmadog. In an attempt to reduce the impact of roads on otters and other species in Wales, staff from several conservation agencies attended the Mammal Society and Highways Agency's **Roads and Mammals conference** in London. The knowledge and experience gained will be used by conservation organisations to influence future road schemes in Wales. The Environment Agency (EA) are still collecting otter corpses for post mortem, so please report casualties to your local EA office, or Wildlife Trust.

A live otter left evidence of its presence on the river Marteg at the Radnorshire Wildlife Trust's Gilfach Farm Nature Reserve last autumn. This came in the form of the tail of a salmon, the rest having been devoured by the otter. The Marteg used to play host to one of the most spectacular salmon runs on the whole Wye catchment until the 1970s and 80s, but even now it is important, with over twenty redds (gravel beds used for spawning) recorded along the river around Gilfach. Clearly, the otters of Gilfach are wise to these autumnal carryings on.

Volunteers working on the **Three Rivers Project** in north-east Wales have constructed a number of otter holts near Wrexham, including two near the aptly named Holt.

The Deeside Urban Wildlife Group's **Hedgehog Awareness Project** recorded 59 live and 30 dead hedgehogs in 2002 in Flintshire. In 2003 the project was expanded to Denbighshire, Wrexham and Conwy. Survey and information leaflets are available from local libraries, containing handy hints about making your garden hedgehog-friendly and including instructions about how to make a hedgehog hibernation home. By the end of November 2003, 81 live hedgehogs and only 7 dead ones had been recorded. To send records, or for further information, contact Clare Christian on 01244 541005, or e-mail: clare@duwg.org.uk

Sally Pidcock reports that there have been fewer **cetacean sightings** in 2003 from the Great Orme, near Llandudno, than there were in 2002. These were of harbour porpoises, with up to 15 seen together, and up to 10 dolphins. There are still regular sightings in Cardigan Bay. Brian Burnett, sailing from Swansea to Caernarfon in the autumn, recorded several schools of common dolphins and one of bottlenose with two sightings of porpoise. It was flat calm for most of the passage, so conditions were ideal.

On the dry ground of the Great Orme National Nature Reserve, **feral goats** surplus to the conservation needs of the site were removed in February, May and October 2003. Thirty-seven were taken to two different locations for conservation grazing. Kent County Council are using a sizeable herd of Great Orme Kashmir goats to restore chalk downland to its former glory; and a private landowner is the proud owner of 15 goats.

Frances Cattanach is Director of the North Wales Wildlife Trust and can be contacted on 01248 351541 or fcattanach@cix.co.uk

Hysbysfwrdd / NoticeBoard

If you would like your wildlife event to feature on this page please contact Mandy Marsh on 01248 385574 or e-mail m.marsh@naturcymru.org.uk

British Trust for Conservation Volunteers
ENVIRONMENTS FOR ALL
European Conference
25 March in Edgbaston, Birmingham. Please call the Conference Organiser on 01844 212005, or for more information on BTCV's work, contact: 01302 572244,
information@btcv.org.uk
or see www.btcv.org

RSPB
For all events call 029 2035 3000 or email cymru@rspb.org.uk for more information.

GHOSTS OF THE FOREST – BLACK GROUSE WATCH
April-May Opportunity to come and see these stunning birds perform their mating display at a specially designed hide near Ruthin.

LITTLE TERN WATCH
May-July Come and view the only remaining colony in Wales at Presthaven Holiday Park, Prestatyn. You can watch the little terns on camera and in the wild.

PEREGRINE WATCH
April-Aug at Dare Valley Country Park. Opportunity to view the fastest flying birds in the world, in their natural habitat and via CCTV.

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HYFFORDDIANT PROFFESIYNOL/ PROFESSIONAL TRAINING
31 Maw/Mar – 2 Ebrill/April
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CONSERVATION TRAINING COURSES, WORKSHOPS & PUBLIC EVENTS. Programme now available. Tel: 01570 493358, e-mail set@denmark-farm.freeserve.co.uk or see www.shared-earth-trust.org.uk

The Moth-ers Union
MOTH MEETINGS 8pm, 1st Monday of every month at Pensychnant Nature Conservation Centre, Conwy. Full details Jim Harold 01248 361126.

Wildlife Trust of South & West Wales
Everyone is welcome to participate in a **WILDLIFE TRUST EVENT**. Please contact the Trust for a full programme of Walks and Talks in 2004: 01656 724100 or
information@wtsww.cix.co.uk

Wales Education 2004
EXHIBTION & CONFERENCE
at Cardiff International Arena
27-28 May. For full details contact Magnus Linklater
Magnuslinklater@newsint.co.uk
Tel: 020 7782 3136
Fax: 020 7782 3405

The Mammal Society
MAMMAL IDENTIFICATION
21-23 May Rhyd-y-Creuau FSC in Caernarfonshire
27-29 Aug Dalefort FSC in Pembrokeshire

SURVEYING WHALES & DOLPHINS
at New Quay, Cardigan Bay
19-20 June, 17-18 July, 14-15 Aug
4-7 Sept (extended course)
For details of these and other courses throughout the UK, phone 020 7350 2200 or e-mail
training@mammal.org.uk
Web: www.mammal.org.uk

The National Trust
RHODODENDRON MEGA-BASH
24-26 Sept
Come and kill the monster which is taking over Snowdonia, we have a huge area to clear and massive fires are guaranteed. Saturday night is party night, with a live band and on-site bar. Over 18s only. Camping at the foot of Snowdon £19 including food and entertainment. Bring a tent.
Tel: 01766 890659. Email:
clive.price@nationaltrust.org.uk

Wales Biodiversity Partnership
WALES BIODIVERSITY WEEK
19-27 June A week of events all over Wales giving you the opportunity to explore your local biodiversity.

Watch out for an exciting new **BIODIVERSITY WEBSITE**, available from April, with future developments, including forums and children's resources, planned for later in the year. The address will be
www.biodiversitywales.org.uk /
www.bioamrywiaethcymru.org.uk
For more information contact
Roy Tapping, 01248 385793
r.tapping@ccw.gov.uk

Arena Network's WALES ENVIRONMENT AWARDS had a new Business and Biodiversity category for 2003, sponsored by CCW. It was won by Brynich Leisure, a family owned and run enterprise in the Brecon Beacons. The award was presented at a prestigious ceremony staged simultaneously in Ewloe, north Wales and Cardiff, south Wales.

Brynich's achievements include a long term environmental development plan and habitat sites established for wildlife. Future plans include the establishment of a recycling facility on the caravan park and installation of solar panels on the shower block.

For illustrations, thanks to/diolch am y lluniau i: English Nature, Mandy Marsh, Alastair Robertson

Mine of *Stigmella plagicolella*
Photo/ffoto: Michael Hammett

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